

UNIVERSITY OF NAIROBI

DEPARTMENT OF DIPLOMACY AND INTERNATIONAL STUDIES

**ROLE OF INFRASTRUCTURAL DEVELOPMENT OF LANDLOCKED
COUNTRIES IN ENHANCING REGIONAL SECURITY: A CASE OF
NEPAL**

BY

**JYOTINDRA MAHAT
REG. NO. R50/39066/2021**

SUPERVISOR


DR. MUMO NZAU

**RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN
INTERNATIONAL STUDIES**

NOVEMBER 2021

DECLARATION

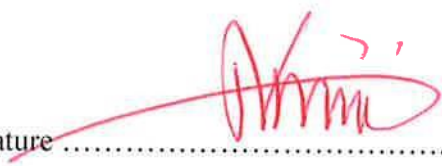
I, **Jyotindra Mahat**, hereby declare that this research project is my original work and has not been presented for a degree in any other University.

Signature.......... Date.....03-12-2021.....

Jyotindra Mahat

Reg. No. R50/39066/2021

This project has been submitted for examination with my approval as University Supervisor.

Signature.......... Date.....03/12/21.....

Dr. Mumo Nzau, Ph.D.

Institute of Diplomacy and International Studies

University of Nairobi

DEDICATION

This study is dedicated to my wife Mrs Laxmi Mahat and our children Dr. Jenish Mahat and Akriti Mahat for their immense support, understanding and encouragement.

ACKNOWLEDGEMENT

I would like to bestow my humble thanks and gratitude to my supervisor Mumo Nzau, Ph.D., who has always supported me morally and guided professionally. With his encouragement, inspiration and professional guidance, I could complete this paper in this form. He has always been a source of guidance and beacon of knowledge to me. I feel highly privileged to ascribe the most and ever burning flame of gratitude to my sponsor Senior Directing Staff; Major General R.A. Elmi, to my friend estimable resource personnel, my son and daughter, with whose auspices I was able to make rapid paces to complete this work. I will be missing my duty if do not thank to Mr. Dawin Bhattarai, who went through my paper and advised me with valuable comment to prepare this paper. Furthermore, he also spared his most precious time and corrected my final paper.

My utmost indebtedness is also reserved for National Defence College, Karen Kenya for impenetrable attention and limitless efforts to make our study fruitful. I am also passionately thankful to faculty members for their ever inspiring guidance and moral support. The college library has also been a great source of information and helped greatly in producing this effort.

ABSTRACT

The research study has focused in identifying critical role of infrastructure development in landlocked countries in enabling their security at regional level in general and Nepal in particular. Infrastructure is essential for the proper functioning of society as a whole, human-natural interaction, and socioeconomic growth within a nation, as well as security. Infrastructure and facilities construction would change the landscape and current structure, enabling for the production, distribution, and trade of goods and services. Infrastructure is one of the most crucial factors for a state's development, as well as a critical role in society with long-term positive or negative implications, and regional stability. The Regional Security Complex Theory (RSCT) argument explains how regional security issues are related. It depicts the interconnectedness of securitized and their de-securitization issues in a given region. The centrality of 'physical' and/or 'geographical' proximity argument for security is often emphasized in the theory. Nepal, a landlocked country in South Asia, is working to improve its infrastructure and become land linked. She must, however, be vigilant of regional security. This study aimed to examine the role of infrastructure development in regional security in landlocked countries, with a focus on Nepal. The study precisely has attempted to find the answer how can the infrastructural development in LLDCs enhance the regional security in order to make human life easy by economic activities and other developmental works with three questions; (1) What is the current status of infrastructural development in LLDCs in general and Nepal in particular? (2) What is the critical role of infrastructural development to enhance regional security in landlocked states? (3) How can Nepal enhance regional security by developing infrastructure? The study adopted a case study research design using both qualitative and quantitative approaches to collect the data. These data have been analyzed and drawn the findings. Majority of respondents with more than 95 per cent agreed that there is vital role of infrastructure in regional security and among the various infrastructures needed for development, transportation issues are important challenges that landlocked countries must address. The survey analysis shows that transportation has higher priority with 79 index of composite value followed by drinking water and communication with 57 and 50 index value for infrastructural development in LLDCs. Transit states can limit transit on various grounds such as sovereignty, security, public health hazards, plant and animal diseases, drugs and weapons, wars and emergencies. Nepal can play a pivotal role as a transit route for China to penetrate into South Asia, including India. Nepal by virtue of its location is a key in linking the two economic giants. Despite of huge trade deficiency with the neighboring countries, Nepal has to take the ultimate benefit from both the economically boomed country along with the other regions of the world. The study has generated some policy relevant recommendations that LLDCs should cooperate with their maritime neighbours and focus on infrastructural development mainly transport network and related to social services. In order to meet the growing challenges and opportunities, LLDCs especially Nepal can take some pragmatic steps such as involving in bilateral and multilateral security arrangements with maritime states, improvement of good transportation network and other social services infrastructures, investing on highways, railway network and land transport, and identify specific transport corridors for development and establish country as a transit hub.

TABLE OF CONTENTS

DECLARATION	Error! Bookmark not defined.
DEDICATION	ii
ACKNOWLEDGEMENT	iii
ABSTRACT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	vii
LIST OF FIGURES	viii
CHAPTER ONE	1
Introduction	1
1.1 Background to the Study	1
1.2 Statement of the Research Problem	3
1.3 Research Questions	4
1.4 Objectives of the Study	4
1.5 Rationale of the Study	5
1.6 Literature Review	6
1.7 Theoretical Framework	16
1.8 Hypotheses	21
1.9 Research Methodology.....	21
1.10 Ethical Considerations.....	24
1.11 Scope and Limitations of the Study	24
1.12 Chapter Outline	24
CHAPTER TWO	26
The Regional and International Dynamics of Infrastructural Development in Landlocked Countries in the 21st Century: A Broad Assessment	26
2.1 General Overview	26
2.2 Common Infrastructure Issues for LLDCs.....	28
2.3 The Relationship between Landlocked Countries and Transit Neighbours ...	39
2.4 Asian LLDCs.....	41
2.5 Asia - Central	42
2.6 African LLDCs.....	43
2.7 South Asian LLDCs	45
2.8 Chapter Summary.....	48
CHAPTER THREE	50
The Role of Infrastructural Development in Landlocked States in Enhancement of Regional Security in Asia	50
3.1 Overview	50

3.2	Asia Pacific Region	51
3.3	Infrastructure Issues and Challenges	52
3.4	Regional Security	59
3.5	Great Power Relation and Regional Security.....	63
3.6	Chapter Summary.....	65
CHAPTER FOUR.....		66
The Impact of Infrastructural Development in Nepal on Regional Security in South Asian Sub-Region: A Critical Analysis		66
4.1	Nepal’s Development Strategy.....	66
4.2	Geo-rights of Nepal	68
4.3	Connectivity Effort of Nepal.....	69
4.4	Challenges Faced by Nepal	72
4.5	Ways to Mitigate Challenges	78
4.6	Impact of Infrastructural Development in Nepal on Regional Security in South Asian Sub-Region	85
4.7	Correlation between Infrastructure and the Regional Security	88
4.8	Chapter Summary.....	92
CHAPTER FIVE		94
Summary of Findings, Conclusion and Recommendations		94
5.1	Summary of Findings	94
5.2	Conclusion.....	97
5.3	Recommendations	98
References.....		100
Appendix 'A'		107
Appendix 'B'		108
Appendix 'C'		112
Appendix 'D'		114
Appendix ‘E’.....		127
Appendix ‘F’		129

LIST OF TABLES

Table 2.1:	Major infrastructure for development in LLDCs	47
Table 2.2:	Key factors of regional security.....	48
Table 3.1:	Challenges faced by LLDCs.....	58
Table 3.2:	Regional security setbacks in Asia particularly in LLDCs	63
Table 3.3:	Regional security factors in the South Asia region	65
Table 4.1:	Infrastructure scenario in Nepal	75
Table 4.2:	Challenges of infrastructure development in Nepal	76
Table 4.3:	Major infrastructures for Nepal’s development	79
Table 4.4:	Overall infrastructure quality of South Asian countries (2013-2014)...	79
Table 4.5:	Logistics performance index (LPI) score	81
Table 4.6	Infrastructure development and regional security correlation.....	88

LIST OF FIGURES

Figure 1.1: Research variables.....	20
Figure 2.1: Individual perception ‘Infrastructure development plays vital role in regional security’.....	38
Figure 3.1: Current infrastructure development sectors in LLDC	55
Figure 3.2: Response on transportation infrastructure as the key determinant of regional security.....	60

LIST OF ABBREVIATION AND ACRONYMS

ADB	Asian Development Bank
APoA	Almaty Programme of Action
ARF	Asian Regional Forum
ASEAN	Association of Southeast Asian Nations
ASEM	Asia-Europe Meeting
BBIN	Bangladesh, Bhutan, India and Nepal Cooperation
BRI	Belt Road and Initiative
CAREC	Central Asia Regional Economic Cooperation Program
CIS	Commonwealth Independent States
COVID-19	Corona Virus Disease of 2019
CSN	Countries with Special Needs
DRC	Democratic Republic of Congo
DPR	Detailed Project Report
EAEU	Eurasian Economic Union
EOI	Expression of Interest
EU	European Union
EWEC	East-West Economic Corridor
FDI	Foreign Direct Investment
FGD	Focused Group Discussion
FY	Fiscal Year
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GIF	Global Infrastructure Facility

GMS	Greater Mekong Sub-Region
ICT	Information Communication and Technology
IMF	International Monetary Fund
IR	International Relations
KIIs	Key Informant Interviews
LLDCs	Landlocked Developing Countries
LPI	Logistics Performance Index
MCC	Millennium Challenges Corporation
MDBs	Multilateral Development Banks
MOU	Memorandum of Understanding
MVA	Motor Vehicles Agreement
ODA	Official Development Assistance
SAARC	South Asian Association for Regional Cooperation
SASEC	South Asia Sub-Regional Economic Cooperation
RSCs	Regional Security Complexes
RSCT	Regional Security Complex Theory
SDGs	Sustainable Development Goals
TAH	Trans-African Highway
TAR	Trans-Asian Railway
TMD	Theater Missile Defense
UNCTAD	United Nations Conference on Trade and Development
UNECE	United Nations Economic Commission for Europe
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific

UN-OHRLLS	United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States
VPoA	Vienna Programme of Action
WSS	Water Supply and Sanitation
WTO	World Trade Organization
ZoP	Zone of Peace

CHAPTER ONE

Introduction

1.1 Background to the Study

Landlocked states are "states without a sea-coast" as described in Article 124 [1(a)] of the UN Convention on the Law of the Sea. There are a total of 49 landlocked countries, including 5 partly recognized countries in the world. Liechtenstein and Uzbekistan are the sole two countries doubly land locked. The majority landlocked countries are facing many difficulties like remoteness from the foremost markets, considerable distance from the coastal area, lack of required infrastructure, with an inadequate legal or institutional environment.¹

32 countries are landlocked developing countries (LLDCs). 16 of these are from Africa, 12 from Asia, two from Europe, and two from Latin America countries.² As of now Afghanistan, Bhutan, Lao People's Democratic Republic and Nepal are the least developed countries in Asia³. Some are categorized in transitional economies which include Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, Mongolia, Tajikistan, Turkmenistan, and Uzbekistan.⁴ The economic and social performance of these countries shows interlinkage of geography and development.

The formed infrastructures as cornerstone for the overall development of LLDCs are required for society's functioning, human-natural interaction, and socioeconomic development. Infrastructure development would lead in social and institutional reform, as well as the emergence of a new infrastructure to replace the old. It would allow for the development, distribution, and exchange of goods and services. It is crucial for any

¹ Double Landlocked Countries 2020, The Two Double Landlocked Countries. Retrieved from www.worldpopulationreview.com. Accessed on 29 November 2020.

² United Nations Conference on Trade and Development, Landlocked Developing Countries. Retrieved from <https://unctad.org/topic/vulnerable-economies/landlocked-developing-countries>. Accessed on 04 August 2020.

³ NOPS (2018). *Infrastructure: Underpinning Sustainable Development*, p.13

⁴ Ibid, p.7.

region's overall development with an efficient service delivery system where infrastructure plays a crucial role.⁵

The level of development of the Least Developed Countries is about 20% smaller than it would have been if they were not landlocked. When formulating planning strategies, it is important to explicitly consider geography-related variables. In this regard, geography associated with other aspects such as political situation and relationship with neighbouring countries play a significant role to economic development and overall growth. With the positive relationship between geographical condition of LLDCs and these aspects, they can catch pace to economic, environmental, and social development. But most of the LLDCs are lagging behind in terms of economic development.

Since market opportunities are limited, poor transit infrastructure often reduces the return on investment in landlocked countries' internal infrastructure.⁶ In view of the numerous role of infrastructure in enhancing development, the LLDCs are investing heavily in transport, energy and communications infrastructure, large warehouses, oil pipeline partitioning and the establishment of dry ports. An effective mechanism could be developed to facilitate interactions and reduce tensions between them, as well as to minimize threats to their stability.

In this regard, landlocked countries are also face security challenges arising from reliance on transit by their sovereign transit countries. It is also affecting the overall security of the region mainly obstructing to the economic development. In order to achieve regional security, there is a need for a holistic approach for infrastructural development. An effective mechanism could be developed to facilitate interactions and reduce security related issues between them, as well as to minimize threats to stability. Thus this study is

⁵ Earley, M. R. (2018). *Transport Challenges and Opportunities for Landlocked Countries for achieving Sustainable Development Goals (SDGs)*, United Nations, p.55.

⁶ Ibid, p.33.

concentrated on highlighting the critical role of infrastructure development within the LLDCs. It also seeks to provide some insight on potential solutions.

1.2 Statement of the Research Problem

Throughout the twentieth century, states have viewed their immediate neighbours as possible sources of threat or protection. By concentrating on these neighbours, states have tried to formulate rules and regulations for a way States can behave in a specific regional grouping. Instead of the worldwide or local level, most of the successful post-1945 security arrangements were achieved at the regional level. As such, the region is that the most appropriate level of study to examine issues of international order. The 20th century marked the increase of regionalism as a multi-dimensional phenomenon in a sort of sectors linked to regional security issues with direct implications of local conflict.

Infrastructure is one amongst the foremost important requirements for a state's development, also a significant role in society with long-term positive or negative consequences. Any country's internal peace and security are directly correlated with its level of development. Similarly, sustainable, resilient and inclusive infrastructure enables the regional security by providing the states with opportunities of trade, transit and other economic activities. Infrastructure development can be achieved by mobilizing the pace of natural, social and human resources management. Highways, railway networks, and land transport facilitation initiatives have also been preferred, to LLDCs gaining special attention to link them to the regional land transport network.

Among the LLDCs, Nepal is now developing its infrastructures and proceeding to become land linked country from its landlocked status. The Belt and Road Initiative (BRI) is looked up as a mechanism for increasing national independence and sovereignty by reducing heavy reliance on India for trade and commerce. Up to now such

infrastructural development has not been studied from the regional security perspective. This study therefore endeavours to carry out a research on the identified knowledge gap.

1.3 Research Questions

In aforementioned background, precisely this research paper has attempted to answer following questions:

1.3.1 Primary Question

Can the infrastructural development of LLDCs enhance the security environment in the region in order to making human life easy by smooth conduct of economic activities and other developmental works?

1.3.2 Secondary Questions

1.3.2.1 What is the current status of infrastructural development in LLDCs in general and Nepal in particular?

1.3.2.2 What is the critical role of infrastructural development to enhance regional security in landlocked states?

1.3.2.3 How can Nepal enhance regional security by developing infrastructure?

1.4 Objectives of the Study

This study was intended in identifying critical role of infrastructure development of LLDCs in enabling their security at regional level generally and Nepal particularly. This research paper constitutes the following general and specific objectives.

1.4.1 General Objective

The overall objective of this study is to analyze the role of infrastructural development of landlocked countries on enhancing regional security in South Asia: A Case of Nepal.

1.4.2 Specific Objectives

The specific objectives of the study include to:

1.4.2.1 Examine the regional and international dynamics of infrastructural development in landlocked countries in the 21st Century.

1.4.2.2 Determine the role of infrastructural development in landlocked states in the enhancement of regional security in Asia.

1.4.2.3 Critically analyze the impact of infrastructural development in Nepal on regional security in the South Asia sub-region.

1.5 Rationale of the Study

1.5.2 Academic Justification

There is little documented knowledge on the LLDCs and regional security and thus this study shall take a unique position in contributing to new knowledge on the subject matter. This new information shall particularly be of importance for governments and policy makers in the process of formulating development policy. Further, the LLDCs Community will be able to get new insights on the impact of infrastructure development. Findings from the study can form a reference point for future students and researchers who would be interested in conducting further research on the area. Thus, my research intends to demonstrate that infrastructure development has strong implication on the regional security. In addition, this research will provide insights into the LLDCs, thus providing the public with new information on the LLDCs.

1.5.2 Policy Justification

In a broader term, this study will evaluate the existing major infrastructures for development in LLDCs, their peculiar problems in conduct of trade and maintaining regional security concerns. Then focus on analyzing the problem of connectivity option available to Nepal and will argue that whether Nepal can be a strategic land linked country by exploring existing and potential connectivity with its neighbours; China and India. Furthermore, this study tries to look into the advantages for China and India by maintaining potential connectivity through Nepal. It is perceived that there is room of improvement in aspect of the basic developmental infrastructures in LLDCs in relation to the security of the region. In pursue of improvement, it does not focus on mere to evaluate the existing infrastructures and implementation of outputs from international conferences held so far. Rather, keeping the geographical constraints, the significance of the paper lies in its attempt to recommending some practicable measures to address the prevailing problem. It is envisaged that the study would be significant for the scholars to understand the connection between infrastructure development of LLDCs and their relation with regional security, and connectivity issue especially focused on Nepal. The findings from the study will also elucidate some insights on areas that can benefit the civil society which is a major player in advocating for regional security.

1.6 Literature Review

The literature review for the study combined theoretical and empirical literature. Theoretical debates on infrastructures availability in LLDCs explored ranges from past to present knowledge with substantive findings including methodological contribution to this subject. This research has been conducted by extensive study and referring various secondary sources. Books related to landlocked countries and articles

including seminar paper related with the connectivity issue amongst the Nepal, India and China have been studied. During the reviewing of the literature, main emphasis has been made to identify the potential connectivity amongst the countries and whether Nepal can be a land linked country with its neighbours so that it can be linked beyond the region. In addition to that, the study has been made to identify the best connectivity option Vis-à-vis economic viability for the economic advancement of Nepal. Empirical literature review entails the study of established research methodologies and procedures were also systematically applied in order to answer the questions related to this research.

Infrastructure refers to the specific physical and operational structures that enable a society or enterprise to operate, as well as the services and facilities that help an industry to function. It can be broadly characterized as a set of interconnected structural elements that serve as a basis for an entire development structure. Indeed, it is a significant term in assessing a country's or region's development and security stability. As such landlocked countries have been the subject of many books and academic papers. Related literatures have been reviewed in the following three parts.

1.6.1 Regional and International Dynamics of Infrastructural Development in LLDCs

Faye, McArthur, Sachs & Thomas (2004), in their research, 'The Challenges Facing Landlocked Developing Countries' argued that landlocked countries are not only facing the challenge of distance, but also suffering from the difficulties being dependence on transit through a sovereign transit country by which their trade must proceed so as to access international shipping markets. While the rivers were a more common sort of trade transit at Adam Smith's time, the neighbourly dependency principle applies equally to the modern road and rail transportation. Such dependency can take the many forms, several of which are less deliberate than Smith's implied

gunbout diplomacy. The paper discussed the most ways during which LLDCs face structural challenges in accessing global markets. After outlining the relatively low levels of development in LLDCs at first, the paper describes the assorted forms of transit dependency and discusses ways during which they interact to impede their economic development. Recognizing that these factors combine to own a distinct effect on particular countries and territories, the paper highlighted the area most and least impacted by each aspect of land locking.⁷

In his book "The Cost of Being Landlocked," Marteau, Jean Francois (2010), proposes a new diagnostic framework for understanding and modeling the constraints faced by logistic chains in landlocked countries. The author highlighted a particular set of development goals focused on the notion of reliance on the transit state.⁸

Sanchez, R. J., Hoffmann, et. al (2003) opined that international transport services have improved very rapidly over the last decades and, with improvement in standardization and trade liberalization and cheaper transport services. They become one amongst the key elements that cause the global economic globalization and integration of production processes. As mentioned in the article published Journal 'Maritime Economics and Logistics, 5', LLDCs still face the issue of being a part of world markets for a range of reasons despite improvements in transport systems.⁹

Feyrer measured the elasticity of per capita income in terms of trade at 0.5. It circumvents the matter in Frankel and Romer (1999), which used time-invariant geography determinants of up to six trade instruments to clarify variations in per capita income across countries, employing a measure of the time-varying impact of

⁷Faye, M. L., McArthur, J. W., Sachs, J. D., & Snow, T. (March, 2004). The challenges facing landlocked developing countries. *Journal of human development*, 5 (1), p.p.31-68.

⁸ Marteau, Jean Francois (2010). *The Cost of Being Landlocked*. The International Bank for Reconstruction and Development: Washington DC 20433

⁹Sanchez, R. J., Hoffmann, J., Micco, A., Zzolitto, G. V. P., Sgut, M. N., & Wilmsmeier, G. (2003). Port Efficiency and International Trade: Port Efficiency as a Determinant of Maritime Transport Costs. *Maritime Economics & Logistics*, 5, p.p.199-218.

geographical distance on trade. The thought is simple; with technological progress within the international transport market, the identical geographical gap doesn't have to the same effect over time. It is therefore the instrumental use of international trade flows to calculate the time-varying distance.¹⁰

Paudel examined at the determinants of economic process in developing countries, with a stress on the role of landlockedness, in his working paper, 'Economic Growth in Developing Countries: Is Landlockedness Destiny?'. The results confirmed previous findings that landlockedness suppresses the economic process, especially in developing countries. Though the extent of the negative effect of landlockedness varies depending on the estimation method utilized on this aspect, there is proof that good governance and free markets are attempting to reduce the negative consequences of being landlocked. However, these countries remain at a disadvantage as compared to countries with similar strategies.¹¹

Adam Smith in his book 'An Inquiry into the Nature and Causes of the Wealth of Nations' 1776 found that the inland portions of Africa and Asia as the world's least economically prosperous regions. He said that because of geographically diverse areas and due to trade complexities, the LLDCs are experiencing difficulties realizing specialization gains and associated advantages. The complexities of long-distance land transport, a subject that continues exist today even after enormous technological advancements. High transport costs usually put landlocked countries at a definite disadvantage compared to their coastal neighbours when competing in global markets. Distance alone, however, does not explain why landlocked countries are at a disadvantage in comparison to equally remote inland regions in major countries. Many

¹⁰ Feyrer, James (2009). Trade and Income – Exploiting Time Series in Geography. NBER Working Paper 14910.

¹¹ Paudel, R.C (2014). Economic Growth in Developing Countries: Is Landlockedness Destiny? January 2014 Working Paper No. 2014/01.

landlocked nations, such as Azerbaijan and Moldova, are further from the coast than parts of China, India, and Russia.¹²

Chowdhury, and Sandagdorj in their research on "Geography Against Development: A Case for LLDCs" tried to analyze the effects of geographic disadvantages on LLDCs' global trade and economic growth, and devise realistic ways to overcome them.¹³

Chang, Kaltani and Loayza (2009) explained how complementarities affect the link between trade and growth in a very dynamic panel containing 22 developed countries and 60 developing countries with on the average 11 observations per country. They examine at how the effect of trade changes on the economic process differs based on the extent of education, financial depth, inflation, telecommunication infrastructure, governance, marketplace stability, and firm entry and exit flexibility, using interaction terms.¹⁴

In their paper 'Infrastructure and Growth: Empirical Evidence,' Romp and De Haan explored the relationship between investment on infrastructure and economic development. They put a lot of emphasis on issues like data consistency limits. National account statistics on investment or capital stock in infrastructure sectors, for example, are only available for a few countries in long series and still contain methodological gaps. They noted out that much of the literature seems to conflate infrastructure with public capital stocks or public investment, both of which are becoming highly ineffective indicators of infrastructure as a function of corporatization, privatization, and market liberalization.¹⁵

¹² Smith A 1776 *An Inquiry into the Nature and Causes of the Wealth of Nations* 2 Vols. Edited by Edwin Caanan *University of Chicago, Chicago, IL.*

¹³ Hoffmann, (2007). *Geography Against Development A Case for Landlocked Developing Countries* - by Anwarul Chowdhury and Sandagdorj Erdenebileg. *Natural Resources Forum* p.p.95-96. Retrieved from https://doi.org/10.1111/j.1477-8947.2007.135_4.x1. Accessed on 07 August 2020.

¹⁴ Chang, Roberto, Linda Kaltani and Norman Loayza (2009). Trade can be good for growth: the role of policy complementarities. *Journal of Development Economics* 90, p.p.33-49.

¹⁵ Romp and De Haan (2007). *Survey the Effect of Public Investment and Infrastructure on Growth.*

1.6.2 Infrastructural Development in LLDCs and Regional Security in Asia

Bagchi and Pradhan (2013) examined the effect of road transportation infrastructure investment on the Indian economy. Using Banister and Berechman's conceptual method to assess the economic growth benefits of transportation systems as a way of avoiding what they called "self-evident" causality, they described the investment on road transportation. They discovered a bidirectional relationship between gross domestic capital production and economic development, as well as between road transportation and capital formation.¹⁶

According to the existing literature, landlocked countries' dependency on their maritime neighbours, rests in four important areas: transportation infrastructure, stability, administrative procedures, and cross-border political relations. These factors make LLDCs' dependency multi-dimensional. Based on the UNDP 2002 report, 9 out of 12 countries with lowest scores in Human Development are landlocked and no landlocked countries, with the exception of European landlocked countries, are listed as 'high human development'.

The United Nations defines LLDCs in Asia as a community of developing economies with distinct geographical characteristics. In Asia, there are 12 LLDCs, each with a different overall and per capita GDP, land area, and population density, as well as different levels of infrastructure growth and financing capability. These countries can be divided into two categories based on their overall development and historical disposition: (1) countries with transition economies (former Soviet LLDCs and Mongolia); and (2) Least Developed Countries.

¹⁶ Pradhan, R.P., & Bagchi, T. P. (2013). Effect of transportation infrastructure on economic growth in India: The VECM approach. *Research in Transportation Economics*, Volume 38 Issue (1), p.p.139–148. Retrieved from <https://doi.org/10.1016/j.retrec.2012.05.008> Accessed on 07 August 2020.

According to a survey conducted by the IMF in 2002, Asian LLDCs would need substantial investment to fill their infrastructure gap and get it up to global standards. Infrastructure financing is needed for roads and bridges, as well as dry ports, power supply and transmission lines, and internet and other telecommunications network connectivity. Infrastructural investment, especially in transportation, energy, information and communication technology (ICT), and water supply and sanitation (WSS), is critical for future development, particularly for LLDCs in Asia. The IMF report stated that raising investment expenditure by one percentage point of GDP increases production by 0.4% in the same year and 1.5 percent four years after.

In comparison to Africa and Latin America, United Nations Conference on Trade Development (UNCTAD) claims that intra-regional trade among emerging economies in Asia is relatively strong, accounting for 53% of total merchandise exports in 2015. In addition, developing Asian countries accounted for 37% of global merchandise exports. Part of the reason for Asia's large share of trade is that it has more transportation infrastructure and a higher degree of regional integration, making border crossing smoother and logistics costs lower.¹⁷

Adler and Polsky (2010) have wrote a substantial collection of works that supports the connection between highway construction and a society's political, social, and economic growth. Highways, in particular, embody crucial political, economic, and social processes that ultimately increase a country's wealth and influence by expanding markets and lowering trade barriers. Ultimately it results in increased productivity outputs while still enhancing the mobility and standard of living for the masses. Road infrastructure is an important factor in enhancing a country's economic condition, and

¹⁷ UNCTAD (2020). World Investment Report 2020. Retrieved from https://unctad.org/system/files/official-document/wir2020_en.pdf . Accessed on 20 November 2020.

the number of kilometers of paved roads available is seen as an indicator of a country's development level.¹⁸

1.6.3 Infrastructural Development in Nepal and its Impact on Regional Security in South Asia

Thapa's article 'Theory of Infrastructure Development in Nepal' published on 2014 points out that, with the change in time and circumstance, people's approach to developmental participation has shifted across the globe. People from all walks of life want to be included in all development projects, at least in their own country. The development project can be brought to a height with the participation of the citizens and the coordination of the government is needed.¹⁹

In his analytical article 'Infrastructure Development in Nepal', published on 15 December 2014, Gaire argues that previous efforts and experiences clearly shown that building of basic infrastructures in the country is challenging. The article claims that the issue of funding has long been a major concern. The long-term viability of new building projects has been questioned due to haphazard and non-engineered construction. In the past, the quality control in some infrastructure projects did not get the attention it deserved. The author strongly advocated that these issues must be thoroughly addressed as country moves toward "construction of a new Nepal."²⁰

Sitaula (2014) in his study 'Infrastructure Development in Nepal: Challenges and Opportunities for Engineer' describes that one of Nepal's most pressing issues is the construction of basic infrastructure in order to promote the country's development. In an outcome, transportation is crucial to a country's continued success and

¹⁸ Adler, W.D., & Polsky, A. J. (2010). Building the New American Nation: Economic Development, Public Goods, and the Early U.S. Army. *Political Science Quarterly*, 125(1), p.p.87–110. Retrieved from <https://doi.org/10.1002/j.1538-165X.2010.tb00669.x>. Accessed on 07 August 2020.

¹⁹Thapa, P. (2014). Theory of Infrastructure Development in Nepal. *The Rising Nepal*, Retrieved from <http://therisingnepal.org.np/news/2607>. Accessed on 20 August 2020.

²⁰Gaire, H.N (2014). Infrastructure Development in Nepal. *New Business*. Retrieved from <https://www.newbusinessage.com/MagazineArticles/view/1030>. Accessed on 07 August 2020.

socioeconomic transformation. With the exception of a limited air service to some areas of the world that is out of reach for most people, road transportation is the most critical form of public transportation in Nepal since it is the only accessible. In Nepal, the relatively short length of railways available has shrunk dramatically over the last four decades, which is recently renovated. The Government of Nepal prioritizes this sub-sector since this overall growth is centered on infrastructure development based on road transportation and focused at poverty reduction.²¹

Wagle in the article, 'Nepal Plans Road Infrastructure Expansion' published in 2014 has investigated the current trend of infrastructural development and income allocation in Nepal. On a period-by-period basis, the trend has been seen at the regional level. The distributional trend of infrastructural growth and wages at the regional level reveals a wide variety of disparities. The nature of infrastructure allocation at the regional level is similar to income distribution. The trend of infrastructure allocation is directly related to the inequality of income distribution.²²

Pyakurel (2013) in his book 'Nepal's Development Tragedy' provides a thorough understanding of the diverse range of Nepalese infrastructure and its problems. A central theme is that the problems of Nepalese development are due to economic inefficiencies and imbalances within the economy's framework, which can only be changed by infrastructure development. The book would be very useful to any or all students, scholars and academic institutions who want to learn more about Nepal's emerging development challenges, such as political economy, agriculture, food security, infrastructure, unemployment, state reform and inclusive growth.²³

²¹Sitaula, T. (2014). 'Infrastructure Development in Nepal: Challenges and Opportunities for Engineer'. Retrieved from <https://www.yumpu.com/en/document/view/34213915/infrastructure-development-in-nepal-society-of-consulting>. Accessed on 21 August 2020.

²²Wagle, R. K. (2014). Nepal plans road infrastructure expansion. *World Highways*. Retrieved from <http://www.worldhighways.com/sections/key-projects/features/nepal-plans-road-infrastructure-expansion/>. Accessed on 21 August 2020.

²³Pyakurel, B. (2013). *Nepal's Development Tragedy*. Kathmandu: 2013.

Koirala (2015), in his research ‘Contribution of Risk Factors for Infrastructure Development of Nepal’ explains that almost all infrastructure projects are running late or over budget, and the efficiency of the projects is deteriorating. A bad train is being taught to new practitioners and experts, which must be avoided as quickly as possible. This is due to the fact that no one, not the Nepalese government nor the general public, is concerned about the risk factors. Infrastructure projects are wasting a lot of time, productivity, and money every moment. This study looks at analyzing and mitigating risk control in infrastructure development programs. Deeper comprehension with intensive study during the pre-planning and planning phases are likely to result in more efficient risk control and, as a result, better efficiency and quality, which will satisfy all stakeholders.²⁴

Gautam (2019) in his paper, ‘Sustainable Infrastructure Development: Nepal’s Zeal’ has explained that Nepal is thriving in infrastructure development in the recent decade. Due to adverse topographical conditions, energy issues, and socio-political backlogs, infrastructure development is quite challenging in the context to achieve sustainable development goals likewise on assure the standard of life. Additionally, the development of infrastructure has become a zeal for Nepalese society today, and some of the plans are being put forward to build and implement large infrastructures. Moving forward, global climate change, urban-rural dynamics, sustainability approaches, among others, are main issues to focus on sustainable infrastructure development in Nepal. This paper sheds light on the issues to drag attention in terms of sustainable infrastructure development in Nepal to realize sustainable development goals yet on improve the national economy.²⁵

²⁴ Koirala, M. P. (2015). Contribution of Risk Factors for Infrastructure Development of Nepal. *The Kathmandu Post*.

²⁵ Gautam (2019). *Sustainable Infrastructure Development: Nepal’s Zeal*. Retrieved from <https://www.researchgate.net/publication/336890498>. Accessed on 13 August 2020.

Fernando and Jayshwal in their article, 'From Landlocked to Land-linked: OBOR in Nepal' published in 2020 argues that Nepal's geographical location renders it a buffer state situated between China and India's sub-systemic rivalries. The BRI initiative provides Nepal with a once-in-a-lifetime chance to step beyond its landlocked status and become land-linked through improved transportation connectivity. Nepal, as a landlocked country with no access to the sea, must rely on other modes of transportation to promote trade and commerce in order to expand. Nepal would benefit greatly from OBOR in terms of trade, industry, tourism, and commerce. Working out practical solutions to the above issues will aid the BRI's success in the Indian subcontinent, especially for small states like Nepal.²⁶

1.6.4 Research Gap

Several writers have written various books and research papers relating to geopolitics, economic development and infrastructure development in LLDCs from general prospective. Some of the books have well covered the geographical aspects of LLDCs but the gap remains failing to talk on the regional security. Identifying the research gaps, the researcher has tried to do comprehensive study on the required infrastructure in LLDCs for sustainable development which fosters the regional security and to turn Nepal from landlocked to land linked country, its geopolitical character, and its rights, interests of neighbours as well as major powers and implications on development of Nepal. Besides, attempts will also be made to visualize the likely challenges in regional security which has also been a major research gap.

1.7 Theoretical Framework

Infrastructures are considered to be basic physical organizational frameworks and facilities (such as roads, buildings and power supplies) which enable a society or

²⁶ Fernando and Jayshwal (2020). *From landlocked to land-linked: OBOR in Nepal*. Retrieved from <https://www.oboreurope.com/en/obor-in-nepal/>. Accessed on 11 August 2020.

enterprise to operate. The infrastructure sector is widely thought to be the country's economic backbone. Importantly, a study of a few empirical studies that used different approaches and models for assessment has supported the importance of infrastructure to economic development and progress.²⁷ Long-term dynamics of collaboration and enmity in the context of sub-global, geographically consistent patterns of security interdependence characterize regional stability.

1.7.1 Infrastructure and Economic Development

The absence of institutions, in particular the scarcity of mechanisms for property rights, is a fatal flaw in dominant theory. Such institutions are important in the assessment of the initial distribution of wealth and income, as well as for the development of mechanisms to ensure the stability and uniqueness of price-setting processes. In order to solve these issues, Ake E. Andersson and David Emanuel Andersson propose in their publication 'Time, Space and Money: New Horizons in Structural and Evolutionary' that a general theory of the effects of material and non-material infrastructures on short-term market balances and knowledge flows and on the accumulation of private capital stock. This theory also accounts for the probability of occasional forays into new economic structures.²⁸

1.7.2 Regional Security Complex Theory (RSCT)

A Regional Security Complex (RSC), as defined by Buzan, is a “group of entities whose major securitization, desecuritization, or both processes are so interconnected that their security concerns cannot be reasonably assessed or resolved from one another.” In the context of Regional Security Complex Theory (RSCT), he asserts that “regions are not given by geography, culture, or current event patterns, or the whims

²⁷ César Calderón and Luis Servén (2004). *The Effects of Infrastructure Development on Growth and income Distribution*, p.7. Retrieved from <https://core.ac.uk/download/pdf/7355059.pdf>. Accessed on 09 August 2020.

²⁸ Ake E. Andersson and David Emanuel Andersson (2017). *Time, Space and Capital: New Horizons in Institutional and Evolutionary*. Eward Elger: Cheltenham.

of analysts, or local discourses concerning regionalism”. The conceptual argument establishes the relationship between regional security concerns. The theory illustrates the interconnectivity of securitized concerns, or their de-securitization in a specific location, in such a way that these issues cannot be addressed or analyzed separately.

Security complexes, like most other regional theories, focus on the level of analysis that exists between particular units and the international system as a whole. The theory proposes the existence of regional sub-systems as security analysis objects, as well as an analytical framework for dealing with them. It, like most other studies in this field, has primarily concentrated on the state as a unit, with the political and military sectors serving as the principal forum for security relations. This framework is emphasized the relative autonomy of regional security relations thereby situating them in the context of unit (state) and system levels.

One of its objectives is to provide professionals with the concepts they need to perform cross-regional comparative study, which currently lacks in the literature. Another is to counter the tendency of power theorists to minimize the importance of regional security issues in international affairs. The development of neorealism in the late 1970s, which concentrated almost entirely on the power structure at the system level, intensified this trend. With the collapse of strong bipolarity at the system level and the emergence of a more diffuse international power structure, it seems logical to expect this bias to naturally decline.

Relationships between global powers and regional security patterns are becoming increasingly essential in world politics. They have numerous connections to the RSCs that make up today's worldwide system. The RSCT serves as a theoretical framework for examining the formation of a new international security organization. It provides a more nuanced perspective than simple terms like unipolarity or center-periphery. It, on the other hand, works in tandem with them and provides enormous theoretical

leverage of its own. The theory applies on to emphasize the importance of the 'physical' and/or 'geographical' proximity argument for regional security.

Security complexes in LLDCs are significantly more difficult to spot than security complexes at work between large powers on a global level. This is due to the fact that a state may be so weak that it is unable to project any power. In other words, it might not even be considered a lower-level security complex; for a weak state, immediate security concerns are frequently directed inwardly rather than outwards. The second reason why a security complex is sometimes difficult to detect when it comes to weak states, according to Buzan, is because of overlay.

As argued by McNamara argues (1990),²⁹ security does not confine only on military power ad hardware, even if it includes these. According to him, “Security is development, and there can be no security without development.” He views security to be the presence of development rather than the military and their weaponry in the area. Based on the aforementioned aspects, security can be defined as a condition of not being financially, emotionally, psychologically, or materially endangered.

1.7.3 Conceptual Model

The overall production function, or input, is linked to efficiency, or performance, in Solow's (1956) neoclassical model. The theory supports the idea of building a path that connects all of the country's locations for economic development.³⁰ Similarly, François Perroux's ‘Growth Pole Theory’, also known as the geography of transportation, states that growth or economic progress is not always universal around an area, but is instead focused at a specific pole.³¹ The theory is used to encourage decentralization and drive rapid economic development by calculating or forecasting

²⁹ McNamara, R.S. (1990). *The essence of security*. New York: Harper and Row.

³⁰ Solow, R.M. (1956). A Contribution to the Theory of Economic Growth. *The Quarterly Journal of Economics*, 70(1), p.65. Retrieved from <https://doi.org/10.2307/1884513>. Accessed on 21 August 2020.

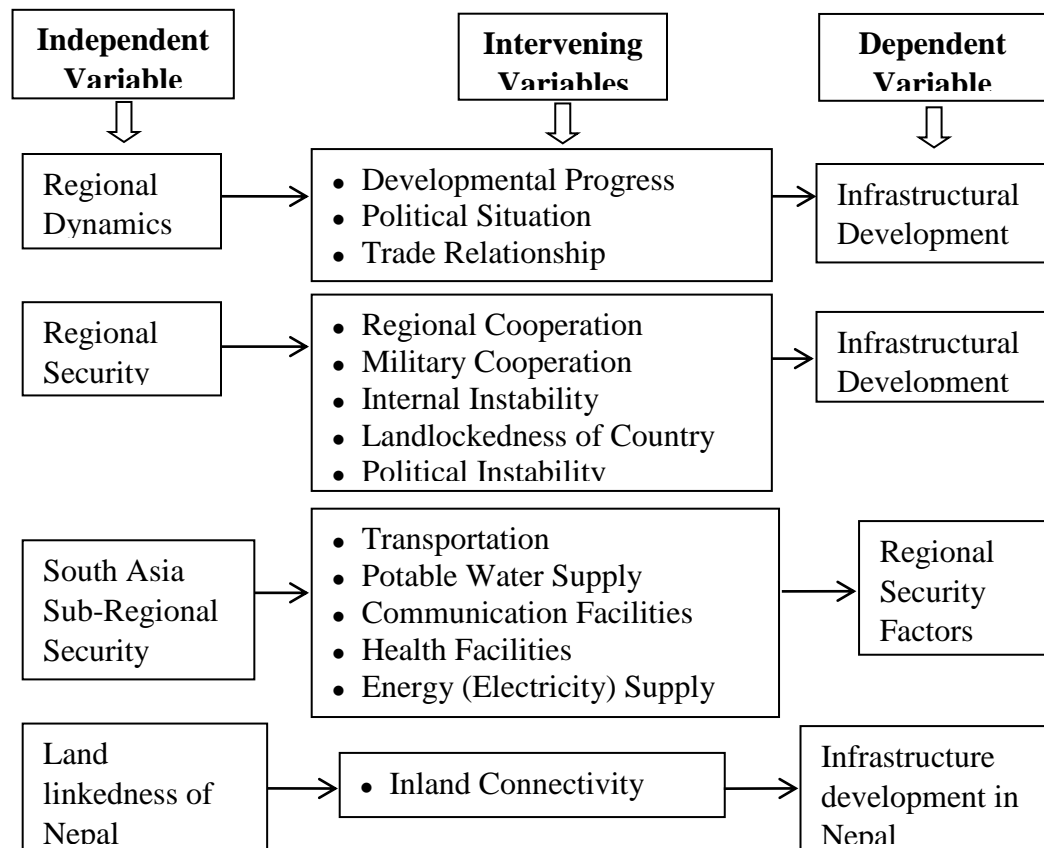
³¹ Frischmann, B.M. (1976). An Economic Theory of Infrastructure and Commons Management. *Minnesota Law Review*, p.114.

population change. It may suggest the best use of available geographical resources to be invested, saved, or redistributed for maximum economic advantage.

Furthermore, ‘Location Growth Theory’ helps to describe the spread of economic activity as it applies to the production of transportation, which leads to the development of a geographical area into an economic center and spatial trade. Frischmann (2005) introduced an economic theory of infrastructure and commons management that provides a theoretical framework for understanding how a country's road network contributes to economic growth and development.

Following figure depict the variables of Regional Security and its relationship.

Figure 1.1: Research Variables



Source: Researcher, 2020

As shown in Figure 1.1, this study conceptualizes that infrastructural development in LLDCs impacted (dependent role) to the regional security dynamics (independent variable) by speedy developmental progress, political situation, trade relationship

between countries, regional cooperation, military cooperation (intervening variables). At the South Asian Sub- region, the regional security factors associated with transportation, drinking water supply, electricity supply, and communication and health facilities impact the regional security. For Nepal's case, the infrastructural development within country mainly standard inland connectivity will provide a good opportunity to be a land linked country.

1.8 Hypotheses

1.8.1 There are likely unique regional and international dynamics of infrastructural development in landlocked countries in the 21st Century.

1.8.2 Infrastructural development in landlocked states is positively correlated with regional security in Asia.

1.8.3 Infrastructural development in Nepal has a likely positively impact on regional security in the South Asia sub-region.

1.9 Research Methodology

The aim of this paper is to learn more about the connection between infrastructure development in LLDCs and regional security. The researcher has used both qualitative and quantitative approaches mostly dependent on secondary sources of data. Certain characteristics have been used in qualitative analysis, such as conducting research in its natural setting, identifying the core issue, describing a specific case after a thorough examination, analyzing the data collection method and process, and correctly interpreting the data.

Considering the research objectives, the qualitative method has been supplemented by quantitative method. For quantitative data collection, the study used 19 questionnaires in two (2) survey categories. Focused Group Discussions (FGDs) from respondents in

addition to the Key Informant Interviews (KIIs) also used to gather qualitative data. The FGD was selected five (5) persons among NDC Course -23 Participants, Kenya and five (5) personalities from various field were chosen for KIIs.

1.9.1 Research Design

The researcher used mixed approaches to conduct a descriptive analysis to explain the relationship between infrastructure development and regional security. A qualitative case study was undertaken to examine the study's context from a holistic perspective, since it was constrained by time, events, and the corona virus disease of 2019 (COVID-19) scenario. The study adopts design of mixed method approach incorporating both the quantitative and qualitative data. Considering the research objectives, the qualitative method supplemented by quantitative method has been selected. The research work relies on analysis of the secondary sources of knowledge, which was collected from different articles, books, and academic papers, government papers such as development plans, circulars as well as internet, electronic and print media. Few primary data have been collected using questionnaire method.

1.9.2 Sampling Procedure

Due to the paucity of time, the study site was confined to the National Defence College, Karen Kenya, and Tribhuvan University, Nepal from August 2020 to March 2021. In this study the researcher used mixed method with purposive and random sampling. The study used 19 questionnaires for quantitative data collection in two (2) categories of survey. The determining of sample size is given Appendix 'A'.

FGDs and KIIs were often went to gather qualitative data. In quantitative part closed ended structured questionnaires (Appendix 'B') were developed and open ended questionnaire (Appendix 'C') were used for qualitative data collection. Five KIIs were also conducted among the professor and senior military officers for qualitative data.

1.9.3 Data Collection Techniques

Respondents were requested to participate in the survey over mail. Once they agreed to participate, open ended and close ended structured questionnaires were sent by e-mail to them. They were requested to send back the filled form to the mail of the researcher. The respondent of Survey -1 (Students from Tribhuvan University, Nepal), Survey -2 (Course participants of NDC Course 23, Kenya) were 23 and 22 respectively. Summary and analysis of responses from survey 1 and 2 is given in Appendix 'D'.

FGD and KIIs were conducted at different places lasting about 25-30 minutes (average). Representativeness of FGD was ensured through careful selection from NDC Course - 23 Kenya Participants from different countries especially from landlocked countries. Within the given time, this provided a good means of serving the purpose of this research. The data obtained from the interviews was recorded by taking rigorous notes. At the end, the researcher compiled the information collected and prepared summary of notes.

1.9.4 Data Analysis Method

Collected data were assessed based on the sources of information, which were divided into quantitative and subjective analysis. The quantitative data analysis was done by using Statistical Packages for Social Sciences (SPSS) software – version 20 (Chicago, IL), and Microsoft office excel (2010). Both descriptive and logical thinking were used for data analysis. The qualitative analysis was carried in three (3) ways; familiarization, data reduction and summarization.

The researcher did the transcription to familiarize the data. Transcripts were made using notes taken during interviews. In an effort to reduction of data, a priori codes and inductive codes were identified and defined in broad group. Definitions included

code abbreviations, full description, and example from transcript. The current research used the sub code of causes and remedial measures. Sample checklists were created for methodologies (FGD and KIIs) to facilitate further data analysis. FGD, and KIIs findings was carried out to identify recurrent themes and cross-checking. Summaries of FGD and Interviews are given at Appendix 'E' and 'F' respectively.

1.10 Ethical Considerations

The printed consent form was given to respondents for reading. The purpose and the process in the study were described in the consent form. They all were informed that there would be no incentives for participating in the study, which their participations were voluntary. They were told that they might decide not to respond to particular questions. Finally, they are assured about confidential handling of their information.

1.11 Scope and Limitations of the Study

The study was limited to the outlook of infrastructural development mainly in landlocked states in South Asia. Research revolves around different aspects of infrastructural development in landlocked states particularly in Nepal for the enhancement of the regional security. The scope of this study was more confined to analyzing the matter of the infrastructure development in Nepal. The study depends upon secondary data with few primary data.

1.12 Chapter Outline

The first chapter of the study includes introductory part to the study that discusses the brief background of the study, statement of the problem, objectives, rationale, and theoretical framework, review of literatures, research questions and methodology. Chapter two shall delve into briefly examining the regional dynamics of infrastructural developmental in LLDCs in 21st century.

Chapter three determines the role of infrastructural development in landlocked states in enhancement of regional security in Asia. Chapter four shall critically analyze the impact of infrastructural development in Nepal on regional security in South Asian sub-region.

Chapter five covers about the summary, conclusion and actionable recommendations of the study mentioning for all LLDCs in general and particularly for better connectivity of Nepal with India and China.

CHAPTER TWO

The Regional and International Dynamics of Infrastructural Development in Landlocked Countries in the 21st Century: A Broad Assessment

2.1 General Overview

Landlocked countries are those without direct access to the sea. They are still among the world's poorest and underachieving countries. Indeed, a brief study of global economic developments over the past decade reveals that these countries' socioeconomic development has been negatively affected by being cut off from the sea. In a Darwinian global economy, LLDCs have become increasingly marginalized. The "death of distance," widely touted in the recent years, which is more myth than the reality for LLDCs. The LLDCs represent countries from all over the world, including some of the world's poorest, with a total of 17.³² Lack of territorial proximity to sea port, distance from global markets, and high travel costs all impede overall socioeconomic development of LLDCs.³³

LLDCs are excluded from major transportation and service networks (logistics, information technology) owing to lack of convenient access to the closest sea. Their international trade is reliant on other countries' transit. Furthermore, long distances to global markets, time-consuming transit processes, and poor facilities all lead to high transportation and trade costs, reducing external trade and, as a result, restricting the economic growth. One of the most significant obstacles to poverty reduction and economic integration in LLDCs is limited access to major markets.³⁴ Companies in

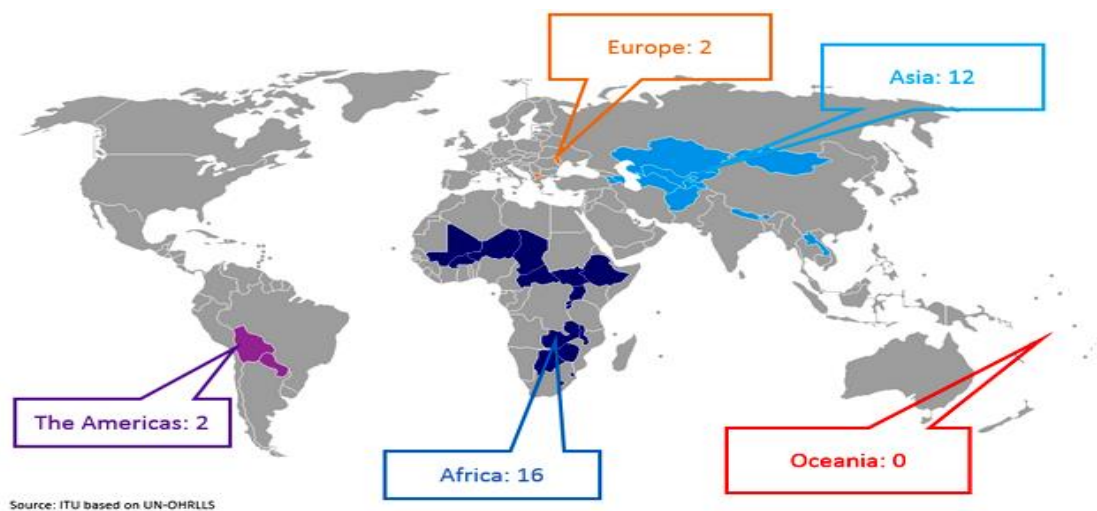
³² World Bank (2002). *Global Economic Prospects and the Developing Countries*, p.99.

³³ *Ibid*, p.5.

³⁴ Faye, Michael & McArthur, John & Sachs, Jeffrey & Snow, Thomas. (2004). The Challenges Facing Landlocked Developing Countries. *Journal of Human Development and Capabilities Volume 5 Issue (1)*. p.p.31-68.

those countries are largely struggling to get goods to their destinations without facing severe disruptions or cost increases. As a result, LLDCs entirely depend on their transit neighbours' facilities and administrative processes to transport their goods to the port. Many transit neighbours are also developing countries, with broadly identical economic structures and resource scarcities. Because of their poor infrastructure and ineffective customs and regulatory processes, trade going through a transit country incurs higher prices, limiting LLDCs' ability to compete in global markets.³⁵

There are 32 LLDCs in a total of 440 million populations in Asia, Africa, Europe, and the South America.³⁶ They are cut off from international markets and face significant development challenges. The Vienna Programme of Action (VPoA) for LLDCs 2014–2024 reaffirmed commitments to the enhancement of LLDCs' connectivity and regional integration. The Almaty Programme of Action (APoA) was founded in the year 2003 with the aim of forming alliances to solve the specific challenges that LLDCs face.³⁷



The spatial constraints of LLDCs also hinder economic growth, environmental protection, and human and social advancement. LLDCs are among the world's poorest

³⁵ Ibid, p.11

³⁶ UNOPS (2018). “Infrastructure: Underpinning Sustainable Development”, p.3.

³⁷ VPoA (2014). Vienna Programme of Action for LLDCs, p.9.

economies, with 17 also classified as least developed countries.³⁸ LLDCs are generally associated with a higher level of vulnerability. They are more vulnerable to rising food costs and the resource scarcity, which can lead to increased food insecurity.³⁹

LLDCs are also more negatively impacted by climate change because the majority of their agricultural land is located in arid and semi-arid areas, with an estimated 54 percent of their land classified as dry-land. They are also affected by desertification, or the conversion of agricultural land to desert owing to the drought, erosion, or unsustainable agriculture, as well as floods, landslides, and habitat destruction. According to the United Nations' Sustainable Development Goals (SDGs) Report 2018, the amount of LLDCs land occupied by freshwater has decreased by 4.7 percent over the last decade (2005–2016).⁴⁰

2.2 Common Infrastructure Issues for LLDCs

LLDCs have developed a variety of infrastructure programs, but there are still a range of problems that need to be resolved in order to achieve the regional integration and also improved competitive trade. The United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS) has identified some of the challenges to achieving these goals.⁴¹ The weak links between road and rail systems at regional level, necessity for road maintenance, faster inter-modal (multiple transportation modes) transfers, the digital connectivity provision, especially internet access and, lastly, all of these items are examples of how to improve renewable energy resources and reliability.

³⁸ WHO/CCU/17.09, Landlocked Developing Countries Health and WHO (Country Presence Profile), Retrieved from <https://apps.who.int/iris/bitstream/handle/10665/255803/WHO-CCU-17.09-eng.pdf;jsessionid=4666DC2653AB0EBFE6F1324D42F2188E?sequence=1>. Accessed on 1 November 2020.

³⁹ UNOPS (2018). “Infrastructure: Underpinning Sustainable Development”, p.3.

⁴⁰ Ibid, p.7.

⁴¹ UN-OHRLLS Global Report 2017, p.36.

2.2.1 Infrastructure Deficiencies

The landlocked countries are making effort to reduce the distance to the sea. They are connected to the sea by navigable inland waterways. Geographic distance can be further minimized if the necessary infrastructures such as bridges, highways, dry ports, and sea ports are in place. Cooperation with the transit country, however, is also needed. Capacity limitations can vary from a lack of containerization to inadequate handling infrastructure, as well as rolling stock, ships, and charges, raise their costs. These capacity challenges are often overlooked, and venture funds are difficult to come through.

2.2.2 The Impact of Borders

The border adds significant costs in trade. Cross-border tensions are a costly major hurdle for countries with inadequate commercial and customs infrastructure. The border issues will always remain between the land sharing countries.⁴² Lipu Lake and Susta are the two most important land issues in Nepal. As a result, simplification of customs processes, record harmonization, and electronic document processing would aid in the creation of an enabling institutional environment.

2.2.3 The Transit Issue

Every landlocked country has to transit through another neighboring country. Their trading competition further hampered by “transit charges” of which they have no direct influence, such as port fees, customs duties, tolls, forwarding fees, or traffic quota limits to their maritime neighbours. To manage this, bilateral or multilateral arrangements with the transit state or states may be used.

⁴² United Nations (2017). Asia-Pacific Countries with Special Needs Development Report. Sales No. E.17.II.F.9.

2.2.4 Growth Influence

Many developed-world economic growth strategies involved labour-intensive export production or assembly as a core component.⁴³ This necessitates a significant portion of intermediate imports that are vulnerable to transit costs and reduce profit margins. The cost of transportation is an implied levy on export earnings. The higher the blow to a government's export-led policy, the higher the transportation costs. Landlocked countries' capacity to trade and access to markets is cardinal to maintaining the demand levels and raising the economic growth.⁴⁴ Trade does help in economic adjustment of developing landlocked countries.

2.2.5 Proximity to Markets

Despite the fact that the existence of big economies "only over the border," in the case of European landlocked countries or the economic giants bordering Nepal, tends to alleviate the detrimental consequences of being landlocked. Exporting the high-value-added goods could be a major reason that landlocked did not matter to the region, in addition to favorable trade agreements and proximity to major markets.

2.2.6 Dependency on Immediate Neighbours

Nepal is solely reliant on India for its importing and exporting of goods and access to the sea because of hilly landscape to the north. For the trade with China, Nepal even depends on India in some cases. The border system between India and Nepal is an

⁴³ Pradhan, G.M. (1990). *Transit of Land-Locked Countries and Nepal*. Jaipur: Nirala Publications. Retrieved from https://projekter.aau.dk/projekter/files/42680865/new_pdf_u Phar.pdf Accessed on 12 October 2020.

⁴⁴ Sachs, J.D. (2004). *The Challenges Facing Landlocked Developing Countries*. *Journal of Human Development*, p.39.

open and porous with free movement of people on either side.⁴⁵ On the Chinese side, since ancient time, Nepal has traded with Tibetans through various border crossings.

However, due to the presence of the Himalayas, the boundary between Nepal and China is difficult to cross. After a brief boundary conflict in the years leading up to 1960, Nepal and China reached an official border agreement in 1961. The Friendship Highway between these countries passes through the border crossing between Kodari and Zhangmu is being functional since 1968. Similarly, the border crossing at Rasuwa Fort (Rasuwadighi) has also been open to foreigners for trade, since 2014. It is considered for a possible rail crossing between China and Nepal in mountainous terrain.

2.2.7 Self-Sustained- Optimum Use of Resources

Nepal has significant mineral deposits, but discovery of these resources is still difficult due to the difficult mountainous terrain, complex geology, lack of infrastructure, and financial constraints.⁴⁶ For over a decade now, Nepal is not able to produce enough agricultural products to fulfill the domestic demand resulting in the country being a net importer of agricultural goods and services. Nepal relies and is increasingly relying more on Indian imports to fulfill its increasing domestic demand, partly driven by increase in population.

2.2.8 Trade

The Nepal-India Trade and Transit Treaties regulate trade between the two countries. Raw materials and manufactured goods are imported from India, while agricultural

⁴⁵ Fernandes, M.D. (2017). Bilateral Transit and Transportation Agreements of LLDCs: Benefits and Bottlenecks - Case India and Nepal. Ulaanbaatar: International Think Tank for Landlocked Developing Countries.

⁴⁶ Rana, P.B., & Karmacharya, B. (2014). A Connectivity-Driven Development Strategy for Nepal: From a Landlocked to a. ADBI Working Paper Series, p.35.

products are exported to India.⁴⁷ Despite the fact that both India and China are economic powerhouses, the two countries' economies are vastly different in size. An estimate of International Monetary Fund (IMF) in 2016 reflect the India's GDP was 0.25 trillion dollars, while China's GDP was 0.4 trillion dollars, or five times that of India. The huge trade deficit still places constraints on the country's economic development.

2.2.9 Infrastructure for Transportation

This necessitates a significant number of intermediate imports, which become susceptible to shipping costs, limiting profit margins in landlocked countries. Creating the missing connections requires a variety of actions, Existing roads can be paved and asphalted, new routes can be built, border procedures could be harmonized, and intermodal transportation networks can be created, to give some examples. The majority of LLDCs are currently operating on corridors of international and regional transit. A transit corridor is a geographical area that connects many points and moves people and goods. This definition encompasses all transportation infrastructures (such as roads, railways, and stations) including new and existing construction in surrounds that infrastructure.⁴⁸

A good example of a good project is Argentina's restructured National Road 81 now links the ports of Chile's Iauique and Paraguay's Asunción. Long-term benefits have resulted from investments in these corridors for both nations with expanded exports from Paraguay to Chile.⁴⁹ Another good example of creating transit corridors is the East-West Economic Corridor (EWEC) runs Laos and Thailand, connecting Vietnam and Myanmar.⁵⁰ By reducing travel time and encouraging the growth of commercial

⁴⁷ Ibid, p.12.

⁴⁸ UN-OHRLLS Global Report 2017, p.30.

⁴⁹ Reis, Jose Guilherme; Farole, Thomas. (2012). Trade Competitiveness Diagnostic Toolkit. World Bank. © World Bank. <https://openknowledge.worldbank.org/handle/10986/2248> License: CC BY 3.0 IGO”.

⁵⁰ Ibid, p.37.

activities and facilities in the corridor, such as guesthouses, gas stations, and restaurants, the EWEC enabled Cambodians to gain access to basic amenities, markets including other public facilities.

Other regional transit networks, on the other hand, a certain level of accessibility is lacking in order to fully realize their potential. Two notable examples of international transport infrastructure networks with incomplete linkages are the Trans-African Highway (TAH) and the Trans-Asian Railway (TAR). According to reports, the TAH has a 56,683-kilometer road network that is divided into nine corridors; however, in Sub-Saharan Africa, the TAH lacks sufficient connectivity to regional road networks and is poorly managed. To provide significant connectivity on the continent, a total of 60,000 to 100,000 kilometers of regional roads required.⁵¹

LLDCs are among the least developing countries, according to the United Nations. They face significant growth and development challenges as a result of a variety of factors, including poor institutional and economic capabilities, narrow domestic markets, and high exposure to external shocks, low physical infrastructure, and isolation from global markets. More than half (sixteen) of the LLDCs are now listed as least-developed nations.⁵² LLDCs have much higher delivery costs and are less competitive in foreign trade due to their lack of territorial sea connections, as well as their remoteness and distance from global markets.

2.2.10 Infrastructure Financing Challenges

According to the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), 65% of infrastructure investments in Countries with Special Needs (CSN) are funded by government budgets, 15% by the private sector, 10% loans and credits from Multilateral Development Banks (MDBs), and 10% by Official

⁵¹ UNCTAD (2001). *Transit Systems of Landlocked and Transit Developing Countries: Recent Developments and Proposals for Future Action*. New York, UNCTAD. TD/B/LDC/AC.1/17. p.p.7-9.

⁵² *Ibid*, p.13.

Development Assistance (ODA).⁵³ Just 30% of infrastructure investments in developing countries are publicly funded by the budget.⁵⁴ There are many challenges and opportunities that can arise from the aforementioned funding sources.

Given the substantial funding gap in infrastructure, all financing sources, including state, private, domestic, and international, would be needed, with the respective functions of these financing sources varying by country and sector. Nonetheless, Asian LLDCs are subject to similar limitations on both foreign funding, as well as public and private assets would be much more complex for them to meet their infrastructure requirements. UNESCAP estimates that the financing requirements needed to close the existing infrastructure gap in order to cover all necessary components of infrastructure such as transport, energy and, Information Communication and Technology (ICT from 2018 to 2030 in LLDCs.⁵⁵ It is estimated to amount to 10.5 percent of the aggregated total GDP per annum. Among the LLDCs, Afghanistan has the largest infrastructure needs in terms of GDP, accounting for up to 29% of GDP, led by Nepal and Kyrgyzstan, each accounting for up to 19% of GDP.⁵⁶

2.2.11 Landlocked Countries' Income Growth

Comparatively landlocked countries are poorer to their coastal neighbours, they are also rising at a slower pace, defying traditional macroeconomic convergence theory. Despite having a per capita income that was about 55% to their maritime transit peers at the start of the decade, the landlocked countries grown at a 25% slower rate than their maritime transit counterparts. This finding follows the observations of other

⁵³ World Bank (2015). Trade, Transport and Telecommunications in the South Caucasus: Current Obstacles to Regional to Regional Cooperation. Washington, World Bank .p.9.

⁵⁴ Ibid, p.7.

⁵⁵ Economic and Social Survey of Asia and the Pacific (2017): Governance and Fiscal Management. United Nations publication Sales No. E.17.II.F.8 Copyright © United Nations, New York, p.p.13-17.

⁵⁶ Ibid, p.21

research, which indicate that being landlocked delays growth by 0.7 percent to 1.5 percent.⁵⁷

2.2.12 Transportation Challenges

For entry to international markets, landlocked countries are totally reliant on the infrastructure of their transit neighbours. When a landlocked nation has only low-quality roads, overland trading is much more expensive than it would be otherwise. As a result, the infrastructure and, indirectly the level of development of a landlocked country's transit neighbours have a significant impact on its trade costs.⁵⁸

2.2.13 Most Affected Areas

In Western and Central Africa, the challenges posed by poor transit neighbor networks are especially acute. Burundi, for example, is heavily constrained by the infrastructure of its transit neighbours, despite having internal road networks that have recently experienced significant improvements in excellent shape.⁵⁹ The Central Corridor, which runs to Dares Salaam Tanzania, is the most direct route from Burundi to the sea. However, when Burundi's main transport corridor to Mombasa (Northern Corridor) was blocked due to political reasons, an alternative route to the south via Mpulungu on Lake Tanganyika to Durban, South Africa, was explored. The fact that this route was considered and implemented despite being nearly 4,500 kilometers long and Tanzania's weak transportation infrastructure is exemplified by many border crossings and modal changes. Rwanda's reliance on the Northern Corridor is growing as a result of the Central Corridor's difficulties, limiting competition.⁶⁰

⁵⁷ MacKellar, Landis., A. Wörgötter and J. Worz (2000). "Economic Development Problems of Landlocked Countries." Transition Economics Series 14. p.3.

⁵⁸ Pechata, V. (1973). The Right of Access to the Sea. Land-locked countries of Africa. Z. Cervenka. Uppsala, Scandinavian Institute of African Studies.

⁵⁹ MacKellar, Landis., A. Wörgötter and J. Worz (2000). "Economic Development Problems of Landlocked Countries." Transition Economics Series 14, p.5.

⁶⁰ Ibid, p.10.

Across much of western Africa, inadequate transport neighbour infrastructure problems can be observed. Despite the fact that the internal connectivity of western African landlocked countries is comparatively poor, the ruined condition of adjacent corridors decreases the value of investing in internal transportation networks, thereby limiting the opportunity. Taking the Central African Republic, as an example, lacks a strong all-weather link to the seaport. Due to the bad quality of Cameroonian infrastructure, the corridor through the country is often impassable during the rainy season because of the Oubangui River is its other route across the Democratic Republic of Congo (DRC) which is currently impassable due to the ongoing crisis in the DRC.⁶¹ It's worth noting that the effects of transit neighbor civil wars have become worse in many of the regions where low transit connectivity is prevalent.

2.2.14 Least Affected Areas

East Asia and South America, unlike Africa's landlocked nations, are surrounded by comparatively high-quality transportation networks. Instead, by ignoring their domestic networks, these countries have frequently missed out on the benefits of the surrounding transit systems. For example, Laos shares a border with Thailand, which has modern infrastructure and has struggled to develop its internal transportation network.⁶² Thailand's transportation system is dominated by four-lane highways, while Laos' transportation system is severely narrow, this example is especially striking. The Thai government has also expanded its rail line to the Lao border; however, it does not go beyond.

The standard of transit service is only relevant in a limited number of cases. In the case of Botswana, the country's economy is highly dependent on diamonds that accounts almost 84 percent of all exports, enabling it to circumvent transit facilities by using air transport. This is made possible by diamonds' high value/weight and

⁶¹ Radalet, S. and J. Sachs (1998). Shipping Costs, Manufactured Exports, and Economic Growth. Presented at the American Economic Association annual meeting, January 1998, p.7.

⁶² Ibid, p.11.

value/volume ratios, since air transportation has a very high cost/volume ratio.⁶³ Botswana does not need to be concerned with its neighbours' transit infrastructure for the vast majority of its exports.

2.2.15 Infrastructure Development Strategies

Bolivia has had some success in bypassing its neighbours' transportation networks by establishing itself as the South American fiber optics hub using its central geographical position. Although landlocked countries have little opportunities to upgrade the infrastructure of their transit neighbours, they can develop industries that are not dependent on it. Landlocked countries now have more opportunities due to new technology advances and the expansion of telecommunications.⁶⁴

Since several landlocked countries are strategically located in their respective regions, their proximity would be advantageous for the development of those industries. Mongolia, for example, might be able to grow a thriving telecommunications industry by using its highly skilled workforce. In the face of competition, port fees, train fares, and road tolls included can be used to facilitate transport nation spending while increasing transit costs.⁶⁵ Similarly, Tanzania's low service levels are being partially improved after it was forced to compete for Burundi and Rwanda's transit business after the reopening of the Northern Corridor in east Africa (Uganda and Kenya). Tanzania has now made significant investments to upgrade rail infrastructure as well as a dry port for the transit trade between Burundi and Rwanda and Dares Salaam. Rivalry has also spurred in Kidatu, Tanzania; a private company (the Trans Africa Railway Corporation) will build a transshipment facility to accommodate rail gauge

⁶³ Reuters (2002). Congo Parties-Strike Peace Deal in South Africa. Reuters, 17 December 2002.

⁶⁴ Infra Africa (2001). Review of Progress in the Development of Transit Transport Systems in Eastern and Southern Africa. New York, UNCTAD. UNCTAD/LDC/115.

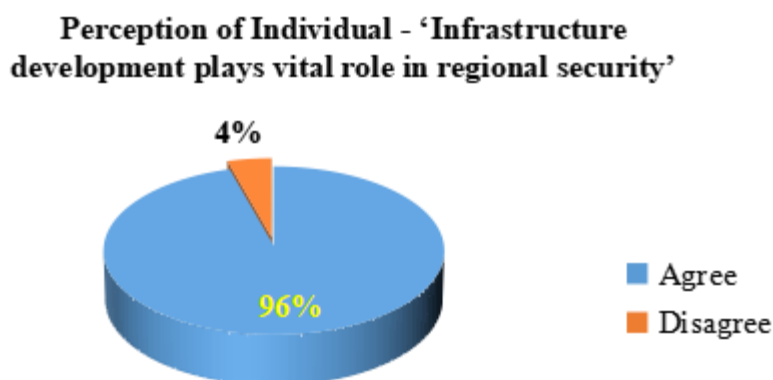
⁶⁵ International Monetary Fund (2017). Mongolia: 2017 Article IV Consultation, December 2017, p.4.

improvements. Traveling is now possible by rail from Cape Town of South Africa to Kampala, Uganda in ten days with this link.⁶⁶

2.2.16 Regional Security Challenges

Infrastructure development within the LLDCs plays a vital role in national and regional security. During the survey of this study, 43 out of 45 respondents expressed a positive opinion that infrastructure development plays an important role in regional security, with a response rate of over 95 percent. The following figure 2.1 shows the response percentage of respondents and survey detail about the perception of individual is given in Appendix ‘D’ - table 1.

Figure 2.1: Individual perception ‘Infrastructure development plays vital role in regional security’



Source: Researcher Survey

Among the various infrastructures needed for development, transportation issues are important challenges that landlocked countries must address, at the same time, political challenges are also a serious concern to them. The impact of political issues on human development is much greater than the impact of infrastructure shortages in the most drastic situations, where states could be completely separated

⁶⁶ Ibid, p.12.

due to a blockade. It's beneficial to differentiate between two forms of political threats because it demonstrates the broad variety of issues that landlocked countries face.⁶⁷

The first is the problem of landlocked countries' lack of bargaining leverage when it comes to negotiating for transportation rights with their transit neighbours. During military confrontation with a transit neighbour, this loss of access may be at its most serious. Civil war within the landlocked country is the second political problem; even if a landlocked country maintained strong ties with its transit neighbour, civil conflict-related border closures will stymie trade.

2.3 The Relationship between Landlocked Countries and Transit Neighbours

When it comes to transport routes, LLDCs usually have no bargaining control over their transit partners. Although a landlocked country's transit neighbour is typically very reliant on it, in most situations, the transit neighbour does not need the resources of landlocked countries and can view the demand for transit rights by a landlocked nation as an infringement on its sovereignty. By bilateral, sub regional, or continental arrangements, landlocked and transit states shall discuss the conditions and procedures for exercising transit rights.⁶⁸

Transit countries shall have the flexibility to implement any steps to ensure that the benefits and services included under this do not infringe on their legitimate interests in exercising absolute jurisdiction over their territories. The landlocked country is granted access, but only if the transit country agrees to do so. The legal literature goes into great detail on whether a transit nation will constitutionally deny a right to access,⁶⁹ however, the relationship between the landlocked nation and its transit neighbour, on the other hand, decides the actual outcome.

⁶⁷ Country Watch (2002). Afghanistan Foreign Relations, Country Watch. 2002, p.3.

⁶⁸ Dion, R. (2000). The Decline of Central Asian Integration. Central Asia Caucasus Analyst Biweekly Briefing, John Hopkins University, p.6. Baltimore MD.

⁶⁹ Pechata, V. (1973). The Right of Access to the Sea. Land-locked countries of Africa. Z. Cervenka. Uppsala, Scandinavian Institute of African Studies.

2.3.1 An Example of Nepal and Bhutan

Most bilateral and transit trade through China is hampered by the Himalayan ranges in Nepal and Bhutan. As a result, both countries depend solely on India for transit trade and are heavily dependent on each other for bilateral trade. Bhutan has a close friendship with India, and any differences between the two countries have been quickly resolved. Bhutan has the most efficient transit procedures among all the countries studied with Royal Bhutan Customs overseeing all transit trade. In other words, in Bhutan's transit trade, Indian Customs plays a minor role.⁷⁰ There is no provision for goods-in-transit protection, which is an added advantage.

Though Nepal and India have a pretty close friendship, their policies are substantially different, giving India a major advantage over Nepal. The Indian blockade to Nepal in 1990, cited as a major factor in the overthrow of Nepalese Panchayat system demonstrated this benefit. While India placed significant trade restrictions on Nepal during the negotiation of a bilateral trade treaty between 2001 and 2002, relations between the two countries were generally positive.⁷¹

2.3.2 Other Examples

Many landlocked countries have alternate trading routes by other transit neighbours, but this is an unusual case of diplomatic helplessness due to landlockedness. Nonetheless, transit countries have the ability to ban or seriously limit trade under some situations. Burundi's neighbours were quick to impose sanctions in 1996.⁷² Similarly, Bolivia has had significant difficulties transiting through Chile due to a century of strained political interactions.

When diplomatic conflicts escalate into a military confrontation between a landlocked state and its transit neighbour, the consequences can be devastating. Following ethnic

⁷⁰ Adhikari, Monalisa. (2014). "Politics and Perceptions of Indian Aid to Nepal." Strategic Analysis 38 (3): p.p.325–340.

⁷¹ Ibid, p.351.

⁷² Dinar, A.B. (1996). "Great Lakes." UN DHA IRIN Weekly Round Up 21.

Armenian forces' capture of Kelbadiar (Azerbaijan), it is reportedly blockaded by Armenia and Turkey. Due to geographic barriers (mountains) and comparatively weak infrastructure, alternate routes across Georgia and Iran were restricted.⁷³

2.4 Asian LLDCs

The geographical positioning of the Asian LLDCs significantly influences the rate at which infrastructure is developed and, as a result, its financing capacity. Inadequate physical infrastructure (transport, energy and ICT), coupled with limited cross-border infrastructure hinders these countries from developing transit infrastructure that is both sustainable and predictable. Regional transportation networks connecting deep-water ports and, by implication, global markets are still lacking. Another future vessel of opportunity for LLDCs is the Global Infrastructure Facility (GIF), which began operations in 2015.⁷⁴ Governments, MDBs, private sector players, and financiers are also part of the GIF. It is indeed intended to be a modern way to work on complicated project planning, structuring, and implementation.

The GIF's extensive project assistance is dependent on the collective strategic and consulting expertise of its agencies. Commercial banks and institutional investors are part of the GIF, which helps to plan and grow well-structured and bankable infrastructure ventures. Factors that are specific to LLDCs, such as mountainous and unfavourable topography, low population densities, higher transportation costs and inhospitable climate, increases the cost of infrastructure construction, thus making investment opportunities relatively unattractive for many LLDCs in Asia.⁷⁵

⁷³ Tavitan, N. (2001). *The Blockade of Armenia by Turkey: None of your Business?* Geneva, Forum of Armenian Associations of Europe.

⁷⁴ ADB (2017). *Meeting Asia's Infrastructure Need*, Mandaluyong City, Philippines: Asian Development Bank, p.p.3-5.

⁷⁵ *Ibid*, p.7.

2.5 Asia - Central

As part of the former Soviet Union, Central Asian republics became folded into the Soviet command economy. Their primary role in this network was to supply manufacturing industries and major markets in what is now Russia and Ukraine with agricultural products mainly cotton and grain, as well as natural resources particularly petroleum and metals.⁷⁶ As a result, rail transportation connections were constructed to boost the production of natural resource harvesting and non-perishable agricultural products. Following the dissolution of the Soviet Union, Central Asian countries are confronted with common issues.

The borders of the countries were created by Soviet administrators and do not correspond to normal usual regional or ethnic boundaries. Several countries also have remote enclaves in neighbouring countries. Rail and road ties have been developed within Central Asia irrespective of today's international boundaries. As a result, large domestic transportation routes often pass through neighbouring countries, resulting causing substantial disruptions and cost increases. This necessitates a substantial investment in domestic transportation systems in the countries.

Russia and Ukraine are the destinations of most of the major transport corridors. As a result, the connectivity to or through China, Iran, and Afghanistan remained underdeveloped. These countries have previously used their reliance on Russian and Ukrainian transportation ties as a bargaining chip. It limits the countries' potential to increase oil and gas exports. The countries' dependence on Russia and the Ukraine is exacerbated by Afghanistan's persistent insecurity and US leverage against establishing trade relations with Iran.

Each area was assigned a special role in the former Soviet command economy. As a consequence, the railway rolling stock is manufactured in Russia and Ukraine, posing

⁷⁶ International Monetary Fund (2015). World Economic Outlook, p.p.11-13.

a significant barrier to international cooperation to preserve and improve critical railway networks.

2.5.5 Regional Security

Central Asian countries, especially the Commonwealth Independent States (CIS), have varying relations with one another. Kazakhstan has advocated for a regional economic union in order to promote interregional cooperation. Despite the signing of a variety of international agreements, there has been little progress in fostering intra-regional trade and political collaboration, especially in the areas of international watershed protection, security cooperation and energy exports. Due to its nationalistic approach and deep patriotic feelings, Turkmenistan is different in the region. Relationships with Uzbekistan, in particular, have gradually declined in recent years.

Because of the emergence of militant Islamist groups operating in both countries and crossing the border into Uzbekistan's Fergana Valley, Kyrgyzstan and, in particular, Tajikistan on a regular basis has led to regional turmoil.⁷⁷ Although the commonly recognized economic need for cooperation and the urgent need for collaboration on environmental policy, for instance, the drying up of the Aral Lake, the control of scarce water supplies throughout the summer months, and transportation networks including national security, no progress toward greater regional cooperation has been visible.

2.6 African LLDCs

Botswana, Lesotho, Malawi, Swaziland, Zambia, and Zimbabwe, all landlocked countries in Southern Africa, are thought to have relatively good transit networks in

⁷⁷ United Nations (2017). Asia-Pacific Countries with Special Needs Development Report. Sales No. E.17.II.F.9, p.7.

comparison to their neighbours. But other African landlocked countries, though substantial efficiency improvements are still expected.⁷⁸

2.6.1 Infrastructure

For a region like Africa, which has a lot of landlocked and small economies, regional integration is critical. By opening up rural areas and improving access to each other's markets, an effective transportation and logistics infrastructure will link these economies and get them up to par. By leveraging economies of scale and best using local specialization, Africa's productive potential can be linked into regional and global value chains, resulting in improved global competitiveness. As a result, trade in Africa could be accelerated and intensified.⁷⁹

A weak transportation infrastructure is analogous to a non-tariff trade barrier in an economy. Without functional road and rail networks, the region's current rate of amazing growth will not flow down to the population in the form of socioeconomic changes.

2.6.2 Regional Security

African regional organizations are now beginning to have solutions to African issues after years of dreaming about it. These organizations must strengthen their capacity to influence national politics favorably, track member state internal conduct, and deter human rights atrocities. More comprehensive regional and national dispute resolution systems and processes are being established over time, but they are also struggling to collect requisite funds and garner enough political support for fully operational.⁸⁰ Non-African actors that are used to engaging in African affairs must have room and resources for these initiatives.

⁷⁸ Ibid, p.33.

⁷⁹ Faye, John McArthur and Jeffrey Sachs Thomas Snow, Michael (2003). Country case studies on the challenges facing landlocked developing countries. Human Development Report Office Occasional Paper, p.p.9-11.

⁸⁰ Ibid, p.13.

Beyond the current structures, regional and sub-regional actors that are prepared to deal with security issues, such as the proliferation of transnational organized crime, extremism, and also election-related violence, are needed. However, this must be achieved in a manner that would not exacerbate the region's growing problems.

2.7 South Asian LLDCs

Bhutan's exports are 94.6 percent to India, and imports are 69.4 percent from there making it the country's most important trading partner.⁸¹ Bhutan's bilateral relationship with India is thus more important than transit trade. In either case, since the Himalayan ranges block Bhutan's only other neighbor, China, India is the country's only transit collaborator. The United States' bilateral relationship with India is traditionally solid, and tensions between them have been held to a minimum. Bhutan do not use the Indian rail system for transportation because it does not extend into Bhutan. To get to Kolkata's secure port, Bhutan relies on India's substandard road infrastructure.⁸² Nepal, on the other contrary, is making use of both of its neighbours' resources. However, trade with China is predominantly bilateral, but trade with India is both bilateral and global.

2.7.1 Infrastructure

Asia's transportation networks are rapidly changing. New technology and geopolitical developments are accelerating transition in the region at a pace unprecedented in decades. Countries and societies are becoming more interconnected as a result of the internet and e-commerce, which is lowering entry barriers to global markets. Long-distance and high-speed rail networks are generating renewed interest, and the rise of emerging economic giants like China, through its BRI, has the potential to attract

⁸¹ IMF (1999). Bhutan: Statistical Annex to IMF Staff Country Report 99/63. Washington, IMF. p.5.

⁸² Ibid, p.7.

investment in both overland and maritime links through Asia and around the world.⁸³ As a result of these megatrends, modern seaports and land ports, railways, and roadways are being built across the entire Asian continent, with the aim of linking countries and economies.

Infrastructures are essential component for human life. They are economically, physically, socially, geographically important. During the research's poll, the majority of people agreed on the value of transportation. It plays important role to increase the linkage between people of one area with other side. Similarly, communication is key secondary priority order, which brings the changes for human life style by increasing link with other world people. So many infrastructures are required in the study area. Priority order kept the frequency model and order taken the same value of 1, 2 and 3. The table shows the priority order of essential infrastructure in the study area. According to the survey's composite value, nearly 80% of respondents believe that transportation infrastructure is critical to the development of LLDCs.

The major infrastructures needed for the development in the LLDCs as viewed by the respondents are given below.

⁸³ Su, S., Ke, J., & Lim, P. (2011). The Development of Transportation and Logistics in Asia: An Overview. *Transportation Journal*, 50 (1), p.p.124-136. Retrieved from doi:10.5325/transportationj.50.1.0124. Accessed on 26 November 2020.

Table 2.1: Major infrastructure for development in LLDCs

Infrastructure	First priority order	%	Second priority order	%	Third priority order	%	Composite Value
Transportation	18	40.00	6	13.33	13	28.89	79
Communication	12	26.67	5	11.11	11	24.44	50
Drinking Water	5	11.11	17	37.78	7	15.56	57
Electricity	5	11.11	9	20.00	5	11.11	36
Industry	3	6.67	5	11.11	3	6.67	18
Health Facility	2	4.44	3	6.67	6	13.33	21
Total	45	100	45	100	45	100	

Source: Researcher Survey

The above table shows that transportation is the top most essential infrastructure in the study area. The composite value shows that transportation has higher priority as much as the index is 79. Secondly, drinking water carries 57 index values whereas 50 index value for communication

2.7.2 Regional Security

The South Asian sub-region which used to be centered on India, in recent years, Myanmar has also drawn foreign interest. Due to the volatile nature of territorial disputes between India and Pakistan, and religious extremist activities, the region has been characterized by a complicated interplay of security, economic, and diplomatic forces that reinforce one another. The conflicting political and geopolitical interests of the region's three nuclear-weapons states, China, India, and Pakistan, are evidence of this.

In reality, the area has seen three major wars: two between India and Pakistan, and one between China and India. In addition, a lot of other border skirmishes have occurred in the region on and off at various times. It also includes the boundary dispute between India and China in Sikkim, and has thus been riddled by tensions, mutual distrust, and

hostility, threatening regional security and stability.⁸⁴ The strategic relationship between the US and India, which many see as aimed at the position of Russia in relation to China and India, as well as joint naval exercises in the Indian Ocean, have given security and stability a new dimension, rising the reliance on extra-regional forces for security and stability. In this case, most respondents further said political stability is the most important factor in regional security during the survey. When expressed as a percentage, more than 70 percent of respondents agree that there should be political stability within the country, with military cooperation in a less priority. The respondents' top priorities for regional security are listed below.

Table 2.2: Key factors of regional security

Particulars	Response out of 45	Percentage
Infrastructure Development	14	31.11
Political Stability	32	71.11
Military Cooperation	10	22.22

Source: Researcher Survey

2.7.2.2 Other Factors

Regional cooperation in trade, information/intelligence sharing and political federation among others transboundary water and energy problems, unsolved border disputes for territory, struggle for regional leadership, quality of diplomacy, natural resources management, climate change (in many aspects of climate change), diseases (pandemics issues) and poverty are major factors.

2.8 Chapter Summary

In this chapter, the indicators for identifying the dynamics of infrastructural development in regional and international level have been identified and justified by survey and content analyses initially. However, the inclusive theoretical knowledge and responses of volunteer participants which are unique to particular landlocked

⁸⁴ Ibid, p.3.

country and countries in specific regions are not focused as per the limitation of the paper. Thereafter, the contemporary situation, past and ongoing security issues in the world is briefly evaluated. Objective analysis shows that there is a difference in perception on the current requirement by different stakeholders; infrastructure development strategies, priority areas for infrastructure development and regional security as well. However, it is clearly evident from the analysis that there is a similarity of threat to regional security and transportation has been considered as a top priority of infrastructure to develop. This clearly shows that there is distinct link between transportation development and regional security.

Finally, the causes for such connection are statistically tested and categorized into internal causes within the LLDCs and external mainly related to maritime neighbours. Majority of the people more than 70 percent think that political stability should be the first priority for regional security which is related to both internal and external aspects. It is inferred that the origin of internal causes is linked to few other factors such as regional cooperation in trade, information/intelligence sharing and political federation among others transboundary water and energy problems, unsolved border disputes for territory, struggle for regional leadership, quality of diplomacy. Natural resources management, climate change (in many aspects of climate change), diseases (pandemics issues) and poverty are also additional major factors for regional insecurity. Thus, part of the hypothesis (the existence of unique regional and international dynamics of infrastructural development in landlocked countries in present era) is proved in this chapter through the preceding steps. However, the extent of this uniqueness and its influence to regional security is yet to be inferred, which is done in Chapter three and four.

CHAPTER THREE

The Role of Infrastructural Development in Landlocked States in Enhancement of Regional Security in Asia

3.1 Overview

The United Nations describes the LLDCs in Asia as a community of developing economies with particular geographical features. Asia's LLDCs include 12 countries with varying overall per capita GDP, land areas and population density, as well as varying levels of capacity to build infrastructure and funding. Across Asia, transportation networks are rapidly expanding.⁸⁵ New innovations and geopolitical developmental trends are accelerating transition in the region at a pace that has not been seen in the years. Along with e-commerce, the internet has brought closer cooperation between countries and economies, reducing barriers to free trade. Long-distance and high-speed transportation of people and goods has reawakened interest via railways; through its BRI, the emergence of economic giants such as China has the potential to bring more and greater investment capital.⁸⁶

These megatrends would see the development of modern seaports and land ports, as well as railways and highways, across the entire Asian continent, adding access to countries and economies along the way.⁸⁷ The United Nations' SDGs provide policy recommendations for states, countries, and cities in transit planning and adoption to usher their people, markets, and communities into a time of green and healthy development.

⁸⁵ Buzan B., Weaver O. (2003). *Regions and Powers: The Structure of International Security*, Cambridge University Press, Cambridge.

⁸⁶ Singh, B. (2015). China's strategic foray In The post-monarchy Nepal: Implications for India

⁸⁷ Ye Hailin, (2016). "India's South Asia Policy and Its Impact on OBOR," *Indian Ocean Economic and Political Review*, 2016. 02, p.p.4-15.

3.2 Asia Pacific Region

Geographically, in many ways, the Asia-Pacific region is the most complex, from the plain of Central Asia to the tropics of South-Asia and the Pacific islands countries, and economically, from the advanced status of countries such as Australia and Japan to those embroiled in civil war and trapped in least developed countries such as Afghanistan. While the region showed stellar growth performance, it has experienced almost the same degree of armed conflict like in Africa, which has inevitably hindered development.⁸⁸

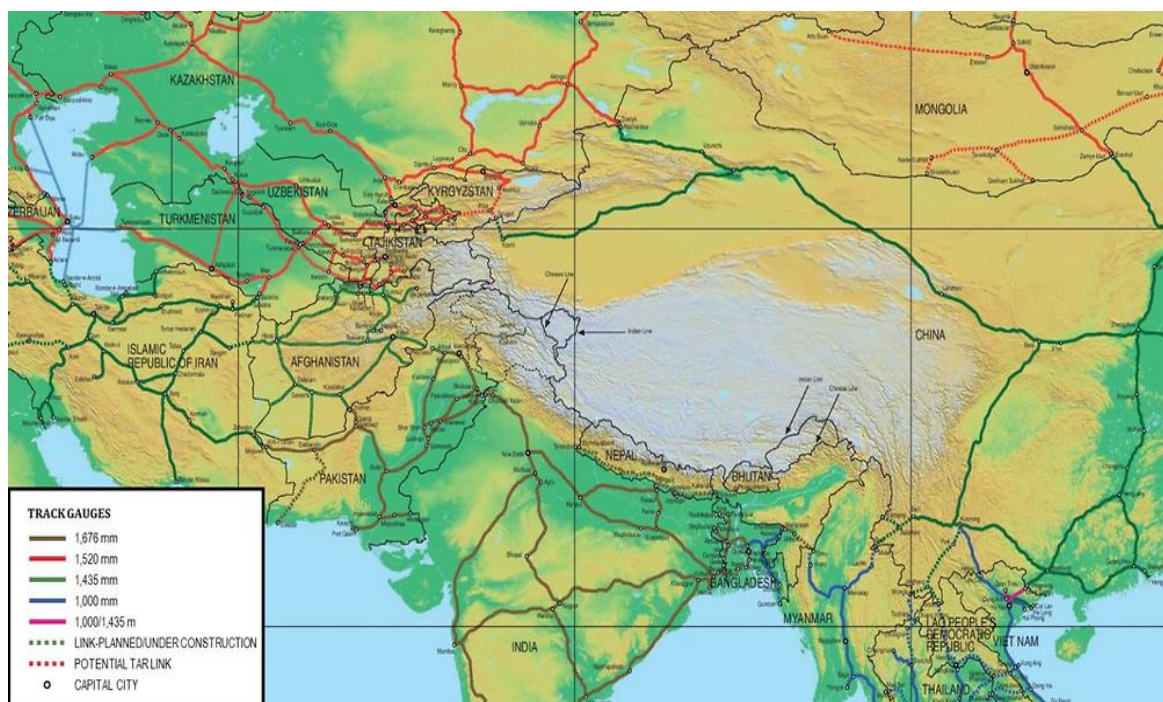
Risk levels and drivers differ greatly across the Asia-Pacific region. From a low-risk Central Asian LLDCs (some of which have seen increased extremist activity) to relatively high-risk least developed South Asian countries, a complex and qualitative evaluation of the environment is needed. The intrinsic delay of conflict often means that a static interpretation of the background is insufficient, since a single occurrence, if left unresolved, may have destabilizing consequence.⁸⁹ For example, while informing the rankings of a few countries as low risk, current domestic instability and transboundary tensions, despite strong underlying socio-economic fundamentals, could imply a different risk classification. Given the structural vulnerabilities of these economies, even small changes in the status quo have the potential to derail progress.

The sum of fund needed to help Asian LLDCs bridge the infrastructure gap and bringing it up to a global standard that is significant; roads and bridges, dry ports, electricity production and transmission lines, and connectivity to the telecommunications networks such as the internet would vary from reliance on

⁸⁸ Asian Development Bank (ADB) (2016). Gender Statistics for the Pacific and Timor-Leste. Manila.

⁸⁹ Collier, Paul (2007). The Bottom Billion: Why the Poorest Countries Are Failing and What Can Be Done About It. Oxford University Press.

infrastructure funding. For future prosperity, particularly for Asian LLDCs, investment in efficient infrastructure such as energy, transportation, ICT, and water supply and sanitation (WSS) is critical. According to a forecast of IMF in 2018, infrastructure spending would increase by one percentage point of GDP.⁹⁰ In the same year, output increased by about 0.4 percent and 1.5 percent the next four years.⁹¹ In 2016, the UNESCAP released a map of the Trans-Asian Railway Network, which indicates a high level of connectivity.



Source: UNESCAP (2016), *Trans-Asian Railway Network Map*, <http://www.unescap.org/resources/trans-asian-railway-network-map>

3.3 Infrastructure Issues and Challenges

In contrast with Africa and Latin America, intra-regional trade among developing economies in Asia is relatively high - accounting for 53% of total merchandise exports in 2015. Developing Asian countries also accounted for 37% of worldwide

⁹⁰ International Monetary Fund (IMF) (2018). Staff Report for the 2018 Article IV Consultation – Debt Sustainability Analysis. Washington, D.C., p.p.3-4.

⁹¹ Ibid, p.9.

merchandise exports. In part, the significant share of trade is due to improved transport infrastructure and a higher degree of regional integration in Asia, making it easier to cross borders and reducing logistics costs. However, the relatively low quality of the connectivity infrastructure and its inadequate capacity to meet rapidly rising demand remains a challenge for the region, especially for LLDCs, which are unable to diversify their economies due to the high cost of transport.⁹² According to the Asian Development Bank (ADB), from 2016 to 2030, developing countries in Asia would need an annual investment of USD 560 billion in transportation to sustain prosperity, minimize poverty, and adapt to climate change.⁹³

More precisely, there is a need to improve and better maintain many road links and corridors in Asia. For example, while the Trans-Asian Highway Network spans 32 countries and includes 143,000 kilometers of road in 2012, the share of main and Class- I roads were only 32%, while more than two-thirds were Class- II roads or a little less.⁹⁴ Low road quality is a major cause of crash incidences and road fatalities in Asia in this context. Furthermore, because of difficulties in harmonizing gauges and rolling stocks across many countries, rail connections are often lacking in Asia. In this sense, while the region includes some of the world's longest rail networks, especially in China, Russia and India, the railway density in 2011 was approximately 6.5 km per 1000 km², compared with approximately 50 km for Europe.⁹⁵ As a result, several plans for the construction of cross-border railways to fill missing links have been established, particularly in the Association of Southeast Asian Nations (ASEAN)

⁹² United Nations Economic and Social Commission for Asia and the Asia Pacific (ESCAP) (2015). Asia-Pacific Countries with Special Needs Development Report 2015. Building Productive Capacities to Overcome Structural Challenges. Sales No. E.15. II. F.9. Bangkok

⁹³ Asian Development Bank (ADB) (2013). Asia's Economic Transformation: Where to, How, and How Fast? Key Indicators for Asia and the Pacific 2013 Special Chapter, p.p.17-19. Manila.

⁹⁴ Ibid, p.p.1-3.

⁹⁵ Ibid, p.5.

region and in LLDCs, within the framework of the TAR Network, which has 118 000 km of rail lines.⁹⁶

In particular, during the Soviet Union period, rail links were generally built in the north-south direction in Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan and Tajikistan in order to transport raw materials from this area to Russia for processing and then to markets in Moscow. The patterns of freight and passengers have changed, however, with increasing demand for east-west lines to connect these countries with each other and with China, the Middle East and Europe.⁹⁷

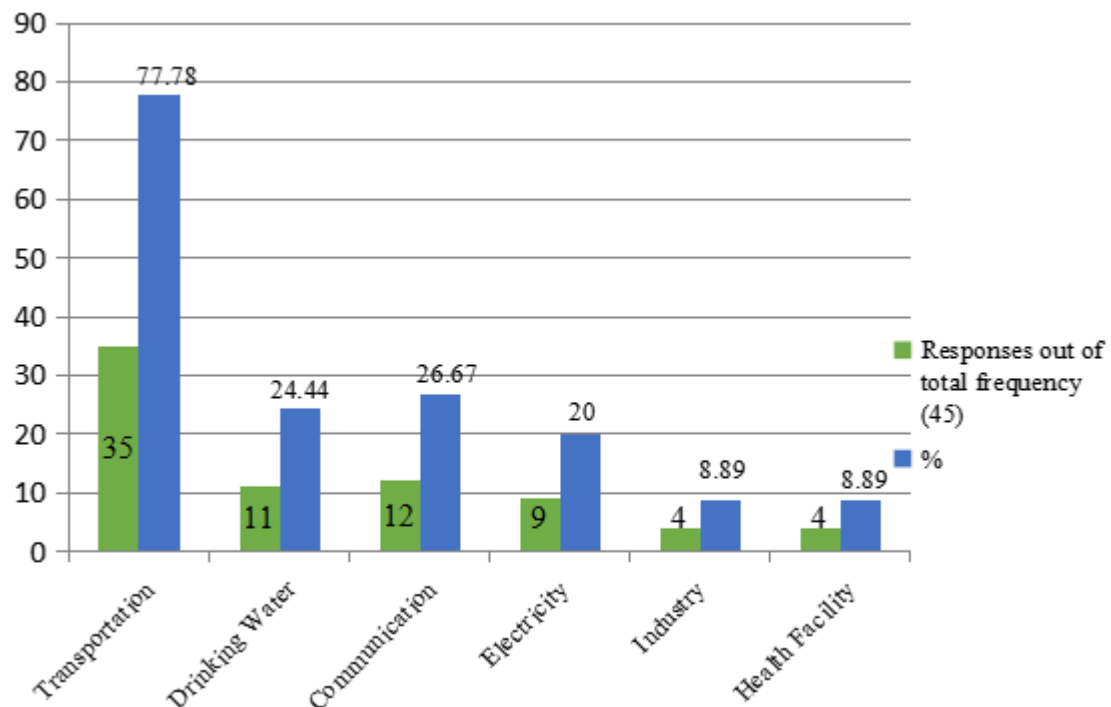
With regard to water transport, trade in ports accounted for a significant proportion of international volume, particularly in the South and Southeast Asia. Nonetheless, inadequate capacity, operational shortcomings, and shallow depth are becoming growing worries for Asian ports, which face growing demand. Furthermore, one of Asia's key priorities is to connect sea ports to land transport corridors to stimulate trade across the continent, including the landlocked countries.

When asked which type of infrastructure is most relevant in LLDCs, the majority of respondents (35 out of 45) said transportation, accounting for more than 77 percent of the total. Then, as their second and third priorities, they chose communication and drinking water supply, respectively. Figure 3.1 depicts the response to current sector approaches and good practices in LLDC infrastructure development, while Appendix 'D' - table 3 contains the detailed survey record.

⁹⁶ Ibid, p.6.

⁹⁷ WTO (2015). World Trade Report 2015: Speeding up Trade: Benefits and Challenges of Implementing the WTO Trade Facilitation Agreement. Retrieved from https://www.wto.org/english/res_e/publications_e/wtr15_e.htm. Accessed on 02 January 2021.

Figure 3.1: Current infrastructure development sectors in LLDC



Source: Researcher Survey

In terms of air transport, traffic in most airports generally exceeds the targeted capacity for both people and goods, despite the potential to handle 1.7 million passengers on average. This is aggravated by a low airport population of 0.22 per million inhabitants, which is even smaller than the average for Africa (0.3) and Latin America (0.8)⁹⁸. As such, with just 57 percent of departures from Asian airports in developing countries departing on time, there are substantial congestion-related delays. Thus, one of the priorities for Asia is to build more airports across the continent.⁹⁹

In this context, a range of sub-regional projects, initiatives, and policies have been established to address various transportation connectivity concerns. For instance, Greater Mekong Sub-Region (GMS) corridor projects, the South Asia Sub-Regional

⁹⁸ ESCAP. (2015). “Reducing Trade Costs: Key Findings from ESCAP’s Trade Process Analysis Database”, p.2. Retrieved from www.unescap.org/resources/reducing-trade-costs-key-findings-escap-trade-process-analysis-database-tpad. Accessed on 02 January 2021.

⁹⁹ Ibid, p.5.

Economic Cooperation Program (SASEC) and the Central Asia Regional Economic Cooperation Program (CAREC), which proposed the cooperation of six multimodal corridors. In particular, between 2010 and 2020, approximately USD 13 billion per annum was allotted for such projects. Similarly, the multimodal strategy has been developed by the South Asian Association for Regional Cooperation (SAARC) and ASEAN. It has developed a new Master Plan on ASEAN Connectivity for projects up to 2025 that also need substantial amounts of funding.¹⁰⁰

Many dynamic problems are faced by the LLDCs. Owing to their remote location, high transportation and transit costs, as well as a lack of easy access to the open sea, they have a substantial economic disadvantage in contrast to the rest of the world. Approximately one third (1/3) of the world's landlocked countries are situated in the Euro-Asian zone, including some of the largest landlocked countries as well as farthest from the open sea. The United Nations Economic Commission for Europe (UNECE) countries are the majority of the Euro-Asian LLDCs; Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, the Republic of Moldova, Tajikistan, Turkmenistan, Macedonia and Uzbekistan are among them, where just Afghanistan, Bhutan, the Lao PDR, Mongolia and Nepal are from outside of the region.¹⁰¹

LLDCs face various problems and risks in the transportation sector, which are in many ways related to the economic and geopolitical context. However, owing to its unique past and geography, each LLDC faces its own range of unique challenges. This segment will outline the concerns and difficulties that LLDCs face in integrating activities for sustainable transportation, as well as some relevant issues that particular country face.

¹⁰⁰Ibid, p.7.

¹⁰¹ Hanks, Reuel R. (2010). Global Security Watch - Central Asia. Santa Barbara, California: Praeger.

It is possible to break the challenges facing transport in LLDCs along many axes. The first distinction is between modes of transportation that are metropolitan, inter-urban, regional, and international. Any of these forms of the urban problems manifests itself in different ways and has an effect on the various elements of the transportation equation.¹⁰² The freight and personal transportation dimensions will be the other axis. Transportation effectiveness, affordability, sustainability, continuity of transportation systems, border crossings, concerns to protection and security when in transit, and other existing issues which can be examined under any of these thematic areas.

The overarching concern for many of the LLDCs is that most of the works on transportation and multilateral action are related to transit. This is mainly focused on the regional linkages. The connectivity is needed to ensure trade linkages and access to the global markets. The challenges of domestic transportation faced by the cities in the LLDCs (in the sense of being cut off from the rest of the world) have gained less publicity, which is a challenge in and of it.¹⁰³

Based on the responses during survey, dependency upon infrastructure levels in transit countries and political challenges are found to be main difficulties of LLDCs. Nearly 45 per cent out of 45 respondents opined that infrastructure levels in transit countries generate the difficulties. Some of them also think that political challenges also create difficulties to the LLDCs which make about 40 per cent. The challenges faced by LLDCs are as follows:

¹⁰² Iyer, Lakshmi, and Indhira Santos (2012). *Creating Jobs in South Asia's Conflict Zones*. Policy Research Working Paper No. 6104. Washington, D.C.: World Bank.

¹⁰³ Picketty, Thomas (2014). *Capital in the Twenty-First Century*. Arthur Gold hammer, trans. Belknap Press, Harvard University Press. Cambridge.

Table 3.1: Challenges faced by LLDCs

Challenges	Responses	Percentage
Dependence upon infrastructure levels in transit nations	20	44.44
Time delays due to high administrative burden	12	26.67
Political challenges	18	40.00

Source: Researcher Survey

Furthermore, the response collected from the FGD reveals the following options for infrastructure development in the LLDCs.

3.3.1 By fully developing their inland infrastructure and cooperating with maritime countries. Countries like Zambia should develop land-link with other neighbouring countries which have access to the sea through investing in road infrastructure.

3.3.2 Through regional infrastructure development and enhancing regional cooperation and improving inland connectivity and having agreements with countries with sea access, ensuring proper transportation system to the border, and faster and efficient clearance of inbound and outbound goods and services.

3.3.3 Through regional cooperation with countries which has coastline and develop good infrastructure and the regional co-operation that will enable joint infrastructure development to facilitate the necessary linkages and access through land and sea.

3.3.4 By investing into inland ports infrastructure and regional cooperation through internal infrastructure development and Regional and International Corporation ensuring a harmonized infrastructural development across all the regional member countries to allow free flow of goods and services.

3.3.5 Taking advantage of UN Resolution on landlocked and winning the good will and faith of next door neighbouring states.

3.4 Regional Security

In the Asia-Pacific region, security architecture has undergone considerable transformation following the Cold War. The current Asia-Pacific security architecture appears to be evolving, especially in terms of "power-sharing" and "power-transfer" between China and US. In the Asia-Pacific and now the Indo-Pacific region, the security order and architecture studies both at home and abroad, has entered an era of accelerated growth. The Asia-Pacific region's security uncertainties are continuously increasing, owing to the steady decline in strategic mutual trust between major powers and the nationalist epidemic in some countries.¹⁰⁴ Many scholars resorted to 'offensive realism' as their canon in this sense, with a bleak view of the regions prospects. Some scholars also thought that increasing tension and military enmity between China and US would make it hard for both sides to resolve their "security dilemma" and, as a result, increase the likelihood of military confrontation. The imperfect regional security architecture, according to many scholars, is one of the main contributing factors to the state of "no-order" and even "disorder" in the Asia-Pacific security order.¹⁰⁵

Interregional structures play an important role as a supplement to regional architectures in improving dialogue and cooperation between different regions and contributing to the improvement of global governance. For more than a decade, with a low degree of institutionalization between European Union (EU) Member States and a large proportion of Asian countries, the Asia-Europe Meeting (ASEM) was created. This presented Asians and Europeans with an excellent opportunity to collaborate in three key areas; economy, politics and socio-cultural issues. Many experts believe

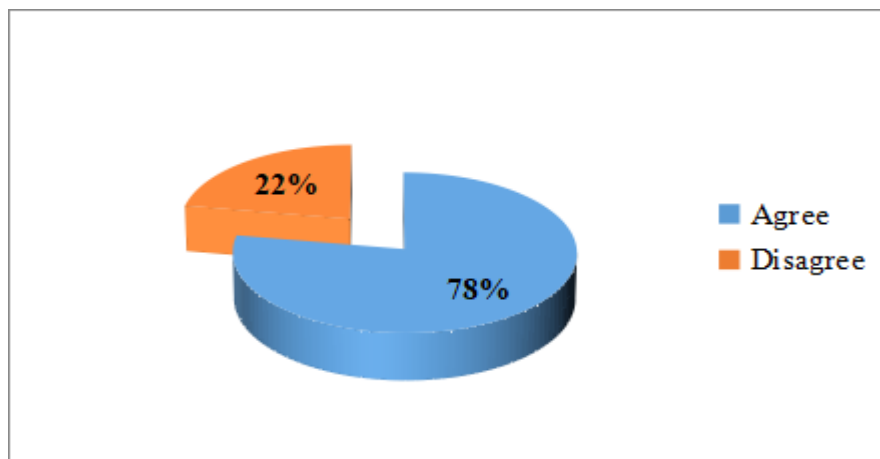
¹⁰⁴ Geoff Dyer, "US v China: is this the new cold war?" Financial Times, February 20, 2014, p.9.

¹⁰⁵ Nick Bisley, *Building Asia's Security*, Abingdon/New York: Routledge/International Institute for Strategic Studies, 2009, p.19.

ASEM would have a healthy influence over the US-EU-East Asia triangle. In reality, ASEM is the product of a power balance in East Asia between the US and the EU.

It is critical to comprehend the existing regional security architecture and to investigate the importance of ASEM as a global inter-regional mechanism in high-power rivalry situation. The relevance of ASEM is being bolstered by worsening regional security situations and the ASEAN community entering a new stage of development. China's BRI and Russia's "Eurasian Union" approach have marked the preliminary attempt and early start of the convergence and modification of the "collaborative" security structure under the new geo-strategic situation in recent years. Transportation is regarded as the key infrastructure for regional security in this context. In response to a question about whether transportation infrastructure is a key determinant of regional security, 35 respondents agreed, accounting for 78 percent of the total. Figure 3.2 depicts the results of the survey in this respect.

Figure 3.2: Response on transportation infrastructure as the key determinant of regional security



Source: Researcher Survey

The new intersection of these two strategies is largely focused on the commercial sphere, stressing the Silk Road Economic Belt's connectivity and coordination with

the Eurasian Economic Union (EAEU). However, in the light of Russia's "Pivot to the East" strategy in retaliation to the US "Return to the Asia-Pacific" strategy and Russia's ability to collaborate with China to safeguard maritime rights and interests. Under the 21st Century Maritime Silk Road, China and Russia would have more potential and opportunities for collaboration.¹⁰⁶

These strategic initiatives would act as a new platform in this case to establish a robust strategic cooperation relationship. As a result, emerging economies such as China and Russia in the Asia-Pacific region, as well as the Eurasian continent as a whole, are reshaping their geo-economics and geopolitics. On the basis of further economic integration, China's related security concepts and system design would gain more cooperation and popularity, giving the Asia-Pacific security architecture more incentive to continue to be adjusted.¹⁰⁷

The regional security system's stability is highly important to the capabilities, security policy and plans of the core countries. Shifts in the Asia-Pacific security environment at the moment are primarily due to the effect of China's rapid rise on the regional power structure. According to traditional foreign relations theory, the shift in the power structure would eventually lead to a change in the regional security architecture, as the institutional supply is effectively financed by power.¹⁰⁸

With the rising escalation of geopolitical competition between China and the US in the Asia-Pacific region, there is increasing and significant concern about a "new Cold War." The security relationship between the security architecture of "alliance-

¹⁰⁶ China's State Council Information Office, China's Policies on Asia-Pacific security cooperation, January 11, 2017.

¹⁰⁷ Louis Brennan and Philomena Murray (2015). Drivers of Integration and Regionalism in Europe and Asia: Comparative Perspectives, p.p.315- 316. London: Routledge.

¹⁰⁸ Hainer Hanggi, Ralf Roloff & Jurgen Ruland (2006). Interregionalism and International Relations, p.319. London: Routledge.

oriented" and "partnership-based" tends to be taken as the fate of "established country" and the "rising power," as well as the institutional inconsistencies between sea-power countries and land-power nations.¹⁰⁹

ASEAN has become a 'third force' in the Asia-Pacific security architecture by establishing a series of multilateral security mechanisms, creating a platform for cooperation between the two major power-driven security architectures. In the meantime, it is playing a role as one of the viable paths for the near future achievement of an integrative Asia-Pacific security architecture.¹¹⁰ The response collected from the participants during data collection showed that the major regional security setbacks in Asia particularly in LLDCs are landlockedness, internal instability and lack of the infrastructure. Similarly, failure of Regional Organization like SAARC, competition between dominant regional players, international political interests is other factors.

In a response to the question about the factors affecting regional security of LLDCs, more than 50 per cent respondents express their view on internal instability as a major factor on this regard. Some of them think that this factor is supported by lack of infrastructure and landlockedness of the country which counts slightly more than 35 percent that could be a factor for regional security setback. Following table show the responses on regional security setbacks in Asia particularly in LLDCs.

¹⁰⁹ Michael Cox, Not just 'convenient': China and the Russia's new strategic partnership in the age of geopolitics, *Asian Journal of Comparative Politics*, Vol 1, Number 4, 2016, p.p.317-334.

¹¹⁰ Liu Qingcai and Zhao Xuan (2014). "Strategic Thinking of China Russia's Pushing Forward the Establishment of Asia-Pacific Security and Cooperation Architecture", p.p.32-41. *Northeast Asia Forum*, No. 3.

Table 3.2: Regional security setbacks in Asia particularly in LLDCs

Factors	Responses	Percentage
Landlockedness	12	26.67
Internal Instability	24	53.33
Lack of infrastructure	16	35.56

Source: Researcher Survey

3.5 Great Power Relation and Regional Security

The complexities of power politics within the US, Russia, China, Japan and India continue to be critical to Asia-Pacific stability and the future of multilateralism. China's bilateral relationship with the US is potentially the most important. Sino-US relations have been volatile after the incident in Tiananmen Square in 1989, and particularly after the disintegration of the former Soviet Union. The complexities are further expanded from the issue of Taiwan. In the name of promoting of democracy and human rights, the US has moved forward with a vested interest, China, on the other hand, sees this as meddling in its internal affairs. Furthermore, China's populism could inflame nationalist sentiments, as well as opposition to "hegemonic and splitist forces" and their "neo-interventionist" policies, which are basically directed at the US, and may escalate out of control.¹¹¹

China is well aware of this in its current relationship with the US that it is the "junior partner" and the negotiation between them is a case of unequal powers. China's propensity to challenge American interests, such as the proliferation of nuclear weapons and ballistic missiles, as well as the security of the Asia Pacific region, is also well established. A number of American acts are clearly seen by Beijing as

¹¹¹ Zhu Liqun (1999). "Cooperative Security and China's Stand", p.p.33-43. Foreign Affairs Journal (Beijing), December 1999.

specifically aimed at containing China.¹¹² The establishment of Theater Missile Defense (TMD), Japan's strengthened security status in accordance with the Revised Defense Guidelines, the US-Philippines Visiting Forces Agreement, strengthened the US security relations with Australia, the proposals to merge four Asia-Pacific bilateral exercises into one (Team Challenge) in 2001, and the US.

The US claims that these are fair safeguarding measures for both its interests and those of its allies, where China is obviously unconvinced. Other major regional powers' problems could have also an effect on the ASEAN Regional Forum (ARF).¹¹³ In the Asia-Pacific balance, a resurgent India, armed with nuclear weapons and considerably strong conventional military prowess, has emerged as a major player. The strategic interests of India in the region are increasing, with concerns that China could undermine to those interests lingering. It is also generally accepted that Japan aspires to be a "normal" country and is improving its capacity to safeguard its increasing economic and strategic interests in the region. Nevertheless, any attempt by Japan bolstering its defensive capability would undoubtedly alert the whole region.

The regional security is mostly affected by the lack of cooperation among the neighbouring countries, political instability with lack of infrastructure. Similarly, other main factors are political ideology, religious ideology, economic instability, terrorism and corruption. During the survey, respondents stated that regional insecurity in the South Asian region is caused by a lack of regional cooperation, political instability within the country, and inadequate infrastructure. In contrast to political unrest and poor infrastructure, which have marginally higher percentages of 57 and 55 percent among 45 respondents, the majority of people with 60 per

¹¹² Chairman's Statement at the end of the First ARF Meeting, Bangkok, 25 July 1994.

¹¹³ Ohn J. Mearsheimer (1995). "A Realist Reply," *International Security*, Summer 1995, p.83.

cent believe that lack of regional cooperation is the most important factor as some of them these factors are boosted by other factors. The regional security factors in South Asian region viewed by the respondents are as follow:

Table 3.3: Regional security factors in the South Asia region

Factors	Responses	Percentage
Lack of regional cooperation	27	60.00
Political instability within	26	57.78
Lack of infrastructure	25	55.56

Source: Researcher Survey

3.6 Chapter Summary

In this chapter, the existence of infrastructure, geo-strategic diversity of the Asia and affecting factors on regional security were evaluated initially. Thereafter the role of infrastructural development in landlocked states in enhancement of overall security in the region is analyzed. Finally, the research hypothesis; positive correlation between infrastructural development in landlocked states and regional security in Asia is validated by mixed method study. But, the fact remains that lack of regional cooperation is the major affecting factor in regional security spectrum. However, to turn country from landlocked status to land linked and enhance regional security, infrastructure development in LLDCs seems to be very crucial. Thus, keeping the infrastructural development including associated aspects, it is essential to critically analyze the impact of infrastructural development on regional security and determine what effective measures must be undertaken especially in Nepal to maintain regional stability in the South Asian sub-region. This is examined in chapter four.

CHAPTER FOUR

The Impact of Infrastructural Development in Nepal on Regional Security in South Asian Sub-Region: A Critical Analysis

4.1 Nepal's Development Strategy

National planning is generally believed to provide an institutional and organizational framework for development and to ensure a sustained high rate of economic growth. The development plan has the ability to contribute accelerate progress, reduce poverty, and achieve development objectives. Economic planning is a government program that aims to coordinate long-term economic policies and regulate and track the degree and growth of the state's main economic variables (income, consumption, employment, expenditure, savings, exports, imports, and so on) in order to meet a range of development objectives. An economic plan is basically a collection of focused economic goals to be attained within a defined time frame, along with a strategy for achieving certain goals.

In addition to physical, economic, environmental, social, and demographic dimensions, development is a continuum that generates progress, development, and progressive change. The goal of development is to improve the community's standard of living and to generate or expand local regional income and employment opportunities while minimizing environmental damage. Development is visible and useful, but not always overnight, which requires a shift in consistency as well as the creation of conditions for the change to begin.¹¹⁴ The development strategy adopted during the initial days of planning had three principal components. These were priority to public sector, industrialization, long term growth and development.

¹¹⁴ Dahal, D. R. (1997). *Geopolitics of Nepal, Survival Strategy of a Small States*, p.3. Kathmandu: NEFAS.

Geographical factors play a vital role for every country. The landlocked countries have to depend on themselves with their resources available within the country which is not always sufficient. So they have to depend on export and import of the goods. Therefore, 'Economic Theory' plays a crucial role, even for the country's global growth. With the infrastructure development, treaties, legal provisions, mutual understanding, it is easy to access the world.¹¹⁵ It will not only help to improve the relationship among the countries but also plays important role in trade and transit.

Landlocked countries have a dual weakness, meaning they are vulnerable both on their own and neighbours because they depend on one or more of their neighbours. It is fact that they do not have any access to the sea, and their neighbours are also not interested in making it easy for them to transport goods through their borders.¹¹⁶ Furthermore, their neighbours may have military or economic incentives to prevent them from accessing the sea or traveling through their nations. Due to the Himalayan range in the north, which limits trade and commerce with China, Nepal remains heavily dependent on India for trade and transit. For many years, India has played significant role in the Nepalese politics, but Nepal's complete independence has been doubted after 1990 blockade by India, which culminated in the overthrow of Panchayat System. According to one Indian observer, Nepal should build an "image of independence..., Mind you, not independence, just an image of independence."¹¹⁷

Actually Nepal faces sever difficulties several times due to blockade by India while trading to outer world. In 2001 and 2002, while renegotiating trade agreements, India imposed restrictions on Nepalese trade. In addition, immediately after the devastated

¹¹⁵ Ibid, p.13.

¹¹⁶ Earley, M.R. (2018). Transport Challenges and Opportunities for Landlocked Countries for Achieving Sustainable Development Goals (SDGs). UNITED NATIONS, p.55.

¹¹⁷ Mishra (2002). Spotlight, May 2002, p.p. 6-9.

earthquake in 2015, as the country was struggling to recover, it faced a blockade from India. As a result, Nepal has limited options other than to cooperate with India's conditions. In normal conditions, Nepal may access the ports of Kolkata and Haldia through an elevated Indian rail network and numerous Indian road corridors. The construction of dry port at Birgunj near to Indian border has strengthened this network. This makes packing, clearing customs, and loading containers on the rail at Birgunj much simpler, with just a modal change and no customs procedures required at the land/sea port.¹¹⁸

4.2 Geo-rights of Nepal

4.2.1 General

Geographically Nepal is located between China and India, two of Asia's most powerful countries. Due to its unique geographical location, the rulers have been careful about relations from the start, especially with its two immediate neighbours, who are very well redirected to Prithvi Narayan Shah's teaching (Divya Upadesh).¹¹⁹

Nepal has to exploit every opportunity that comes with the diverse connectivity projects. Connectivity projects will help to build the infrastructure that is very critical in Nepal. The governments must therefore avoid unbalanced treaties and political dependency and press for greater accountability. Nepal has signed new treaties with China to enhance its access to Chinese ports. This will also boost Nepal's negotiating stance in relation to India.¹²⁰

¹¹⁸ Ibid, p.13.

¹¹⁹ Nepali Army (2021). Dibyopadesh, Kathmandu, p.7.

¹²⁰ Thapa, R. (2010). Article V of General Agreement on Tariffs and Trade 1994: From the Perspective of Ensuring Freedom of Transit To Land Locked Countries. *Business Law Journal*, Volume 15, p.17.

4.2.2 International Legal Instruments

The international community has accepted many international legal instruments which contained relevant provisions that aimed at enabling landlocked countries to gain access to the seaports through transit neighbouring countries.¹²¹ There are four major legal instruments containing the concept of transit traffic as follows:

The Convention and Statute - 1921 on the Transit Freedom (50 Parties; came into force on 31 October 1922) provides for the unrestricted movement of various commercial goods across national boundaries.

General Agreement on Tariffs and Trade (GATT) 1947, GATT 1994 (Provisional entrance into effect on 1st January 1948), World Trade Organization (WTO) with 150 members operates a non-discriminatory trading system that lays out their rights and obligations.

Landlocked States Transit Trade Convention, 1965 (entered into force on June 9, 1967; 38 States Parties); deals with international rules enable landlocked countries to move goods to and from seaports. The landlocked and coastal states those that ratify the convention required by its provisions.

The United Nations Convention on the Law of the Sea 1982 (155 States Parties; took effect on 16 November 1994) deals with innocent passage across territorial seas.

4.3 Connectivity Effort of Nepal

Nepal was overlooked by the rest of the world until its entry to the United Nations in 1955 despite situated between the commercially, militarily, and geographically big

¹²¹ Rana, P. B., & Karmacharya, B. (2014). A Connectivity-Driven Development Strategy for Nepal: From a Landlocked to a Land-linked State. ADBI Working Paper Series No, 498, Asian Development Bank Institute, September 2014, p.35.

countries; China to the north and India to all other sides. Evidences show that since then, India has long exerted an influence on Nepal shaping and guiding it as one of the world's poorest countries by drafting it to rely heavily on imports from India and constraining on its ports for sea access. Subsequently, influencing and pressuring the political leaders of the landlocked nation to stay away from joining the initiatives from the other neighbouring country, despite Nepal being a sovereign country.¹²²

Exploring the available some opportunities, Nepal can shift from "landlocked" to a "land-linked" state by introducing a "connectivity-driven strategy" that includes efficient, advanced, and affordable transportation connectivity.¹²³ Through connectivity, trade, tourism and investment can mitigates unemployment and poverty can be alleviated. A new initiative of Co-operation between Bangladesh, Bhutan, India and Nepal (BBIN) provides connection of the region with the signing of Motor Vehicle Agreement (MVA) on 15 June 2015 in Thimpu.¹²⁴ Based on the transfer of goods, passengers and vehicles through the BBIN zone, facilitating the trans-shipment of goods from one country's truck to another at the border, this will save both time and money.

Nepal needs a 'connectivity-driven strategy' with accessible, advanced and affordable transportation infrastructure to turn the status of 'landlocked' to 'land-linked.' This would help the country's overall economic growth by promoting trade, tourism, and investment, as well as reducing unemployment and poverty. Railway transport is thought to be the quickest and most cost-effective mode of cargo and passenger transportation. The railway line in Nepal is still at its early stages of construction.

¹²² Bhattarai, R. (2005). *Geopolitics of Nepal and International Responses to Conflict Transformation*. Kathmandu: FFP Publications.

¹²³ Paudel, D., & Le Billon, P. (2018). *Geo-logics of power: disaster capitalism, Himalayan materialities, and the geopolitical economy of reconstruction in post-earthquake Nepal*. *Geopolitics*.

¹²⁴ Kumar. (2015). *Embracing Sub-regionalism in South Asia*. Policy Brief, p.28.

However, implementing domestic and cross-border rail connectivity policies and plans should be a high priority area of Nepal's transport focus to address the country's slow economic development.¹²⁵

Nepal has repeatedly stated the need for a railway system and has attempted to pave the way for it to be built. Nepal's transportation backbone is the 945-kilometer East-West Electric Railway, including Bardibas-Simara, Simara – Tamsariya, and Tamsariya – Butwal, feasibility studies were also conducted, as well as Nijgadh – Hetauda – Bharatpur (an alternate path to Simara – Tamsariya). The government conducted feasibility study of the Rasuwagadhi-Kathmandu-Pokhara-Lumbini Railway link in fiscal year 2015/16. Fresh developmental process in domestic rail connectivity was also done. Kathmandu Metropolitan City, Nepal, and Cimex INC Pvt Ltd, China, signed a Memorandum of Understanding (MOU) to conduct a feasibility report for a "Sky rail system" in Kathmandu, as well as a request by the Government of Nepal to carry out a feasibility study of the Kathmandu-Birgunj Railway Line also put on.¹²⁶

China has planned to construct a railroad from Xigatse to Kerung-twenty-five kilometers from the Nepalese border at Rasuwa.¹²⁷ Railway lines up to Xigatse has already been built from Central China and completed by 2020. The project opened a new transport corridor between Nepal and China. Nepal made attempts to utilize strained relations of India and China to its advantage but geography has placed its

¹²⁵ Rana P.B. and Binod Karmacharya (2014) A Connectivity- Driven Strategy for Nepal: From a Landlocked to a Land-Linked State., ADBI Working Paper Series No. 498, Asian Development Bank Institute, September 2014, p.p.7-11. Retrieved from <https://www.adb.org/sites/default/files/publication/156353/adbi-wp498.pdf>. Accessed on 21 August 2020.

¹²⁶ "Nepal: Economy". Asian Development Bank, 2016, Retrieved from <https://www.adb.org/countris/Nepal.economy>. Accessed on 21 August 2020.

¹²⁷ Kumar, A. (2016). Nepal PM KP Oli's Visit to China. p.7.

own limitations.¹²⁸ Now, it is trying to enter a new phase of trans-Himalayan linkages or bridge between the two neighbours.

4.4 Trade Related Challenges Faced by Nepal

4.4.1 Violation of International Conventions

The Government of Nepal believes that the port authorities in Kolkata have used inspection of goods destined to Nepal from third countries, contrary to the theory that goods in transit from a third nation to a landlocked country need not be checked by coastal state authorities.¹²⁹ In international conventions on landlocked countries and in international practice and use, unregulated transit facilities are provided for landlocked states and free movement of goods from third countries. As a result, even in the lack of a treaty binding Nepal and India, India had no legal authority to deny Nepal the transit benefits conferred by international conventions and practices.

4.4.2 Restrictions on Trade

India always remains Nepal's main trade partner and source of foreign investment due to its strategic location, as well as a transit country for almost all third-country trade. India accounts for approximately two-thirds of Nepal's commodity trade, one-third of utilities, one-third of foreign direct investment (FDI), and almost all of the country's oil supplies. In addition to bilateral trade, transit trade in Nepal is routed via twenty-two routes between the Indian-Nepal border and the Indian ports of Kolkata/Haldia and Vishakhapatnam. At present due to COVID-19 pandemic, cross border points have been limited to less than 15 for temporary arrangement. Nepal also has an

¹²⁸ Ibid, p.14.

¹²⁹ Jayaraman, T., & Shrestha, O. (1976). Some Trade Problems of Landlocked Nepal. Asian Survey, p.12.

agreement with Bangladesh to use the ports of Bangla and Mongla ports to trade through India. But using these ports, Nepal experienced with restriction imposed on the check points and delayed clearance by the customs in India. According to the Nepalese government, India has also resorted to pressure tactics by regulating Nepalese import-export trade and suspending essential commodity deliveries, as well as taking a hard and unconciliatory approach to trade and transit negotiations.

4.4.3 High Transportation Costs

Nepal faces higher transport costs as compared to their maritime neighbours. The cost borne by Nepali exporters, are higher than those of competitors in other countries.¹³⁰ The rising transport costs in Nepal is linked broadly to trade related dynamics arising from their geographic location, usage of transit infrastructure of their main transit partner, lack of good political relations with and within neighbours and administrative processes for goods in transit. Nepal's geographic remoteness results in higher transport costs due to long routes and high fuel expenditure. This in turn directly raises the cost of their exports and imports. The high transport costs also have several indirect trade impacts.

4.4.4 Impact on FDI

Like other developing countries, Nepal has also given priority to foreign investment. Thus, Nepal set up an Investment Promotion Board to encourage foreign investment. Indian investors have invested and also expressed their interest particularly in hydropower, tourism, health services, forest products, herbal products, food

¹³⁰ Pradhan, G.M. (1990), *Transit of Landlocked Countries and Nepal*, p.60, Jaipur; Nirala Publications. Retrieved from https://projekter.aau.dk/projekter/files/42680865/new_pdf_u Phar.pdf. Accessed on 12 October 2020.

processing, infrastructure development and software industries.¹³¹ Nepal has been compelled to seek access to the sea only from India due to the steep landscape of the Himalayan range in the north. As a consequence of this fact, there is a high administrative cost, which would create lesser profits for investors, that would have an effect on their economic performance and export competitiveness, which would eventually discourage investors.

4.4.5 Threat of Economic Embargo

Nepal has witnessed the impact of geographical impetus on the political and economic spheres throughout its history. Because of its buffer-type geographic role, Nepal is compelled to focus on its strategic and foreign policies entirely on India and China.¹³² Between India and China, there is a major socio-economic, political, and cultural divide, as well as a significant rivalry for the role of regional influence in Asia. Nepal's economic status has been changed by the unfavorable relationship between these countries. Thus any major political and economic decision made in Nepal has geopolitical ramifications in the region. Similarly, the effect of policy changes between India and China obviously has an impact on Nepal's business sector. Nepal is still threatened with economic embargo because of its geographical vulnerability.

Nepal's relations with India have not always been smooth, especially where India is "perceived" to influence the negotiation of treaties and disputes. Nepal does not have direct and easy land routes to countries other than India. Nepal remains not only landlocked, but also functionally as 'India-locked.'¹³³ The supply routes for Nepal's

¹³¹ Earley, M.R. (2018). Transport Challenges and Opportunities for Landlocked Countries for achieving Sustainable Development Goals (SDGs). UNITED NATIONS, p.55.

¹³² Anselin, L., and S. Rey (1991). Properties of tests for spatial dependence in linear regression models. *Geographical Analysis* 23, p.p.112–31.

¹³³ Glassiner, M. I. (1998). Transit rights for land-locked states and the special case of Nepal, p.12. Sage Publications.

survival are therefore, elusive and its economy remains the most fragile. The previous economic embargos on the Indo-Nepal border are some pertinent examples.

Relatively the territorial size, developmental level and population are key determinants of vulnerability.¹³⁴ Nepal is at the least advantageous position compared to its neighbours, particularly due to lack of easy accessibility to the ports. The impact of the changes in policies between India and China would have influence on the business sector of Nepal. After 2017, Nepal gained connections to a total of six Chinese dry ports, paving the way for alternate seaport routes.

Table 4.1: Infrastructure scenario in Nepal

Infrastructure	Name	Total Area
1. Irrigated and cultivated land	Total	26.5 lakh ha.
	Irrigable lands	17.6 lakh ha.
	Irrigated lands	11.2 lakh ha.
2. Sanitation water		
3. Railway covered		59 km
4. Airport paved		11 nos
5. Road networks	Road all weather	11,000 km
	Total road network	28,000 km
	Paved road	4,000 km
	Graveled and earthen road	24,000 km
6 Electricity	Total mega watt	618 mw
	Electricity hydro power	556 mw
7 Diesel covered		55 mw
8 Fuel/Energy fossil		18 lakh
9 LP gas		225 Mt/day
10 Telephone line users		5.3 million populations
11 Internet users		0.2 million people

Source: Aid Asia, 2019. Retrieved from <http://aidasia.org/nepal-infrastructure-2019>

¹³⁴ Kumar. (2015). Embracing Sub-regionalism in South Asia. Policy Brief, p.28.

4.4.6 Impact on Economy

Nepal have a trade imbalance and as a result an arising asymmetry in transportation. For instance, the current reliable traffic is almost entirely one-sided from India to Nepal. Wagons return to India empty.¹³⁵ This results in under-utilization of existing transport capacity and delays due to the need for goods aggregation at the departure port or de-stuffing and aggregation of containers at the arrival port (e.g. Raxaul before shipment to/from Nepal). Nepal has comparatively narrow basket of exports and a heavy dependency on their main trade and transit partner. As a result of over reliance on a single trade and transit partner, Nepal has a restricted number of trade partners. Thus, Nepal continues to have a lower economy, with GDP per capita lower than any other South Asian nation except Afghanistan.¹³⁶

4.4.7 Insufficient Infrastructural Development

The challenges of infrastructure development in Nepal as viewed by the respondents are given below.

Table 4.2: Challenges of infrastructure development in Nepal

Challenges	Responses out of 45	Percentage
Political Instability	16	35.56
Landlockedness	21	46.67
Lack of planning	14	31.11
Others -Not sure	1	2.22

Source: Researcher Survey

¹³⁵ Bhattarai, R. (2005). Geopolitics of Nepal and International Responses to Conflict Transformation. Kathmandu: FFP Publications.

¹³⁶ United Nations. (2007). Regional cooperation in transit transport: Solutions for landlocked and transit developing countries. Geneva: United Nations.

More than 46% of respondents believe that Nepal's landlocked status is the most significant barrier to infrastructure development. However, more than a third of respondents believed it was due to poor preparation, and almost a third believed it was due to political unrest. During the survey it was found that only landlockedness is not a most challenging factor for infrastructure development, it is fueled by other factors as well. There are also several other hurdles in the country's infrastructure growth. These are mentioned below.

4.4.7.1 CIAA Interventions: The Commission creates a situation of terror by the investigation of activities of abuse. It uses the abuse of authority by public officials and corruption.

4.4.7.2 Local Demand: The government makes verbal and written commitments to meet the high aspirations of local people. There is no clear national policy framework to address the demands of locals or projects affected people, among many others.

4.4.7.3 Lack of Effective Dispute Settlement Mechanism: In its absence, infrastructure projects do not become attractive targets for investors.

4.4.7.4 Unfriendly Tax Laws: In the existing tax laws create barriers instead of facilitating the development projects.

3.4.7.4 Other Factors: Geographical difficulties, failure to attract FDI, lack of competent manpower and resources. Similarly, lack of consensus between stake holders, interests among the stake holders, weak governance are also the challenges.

4.5 Ways to Mitigate Challenges

4.5.1 Legal Action

It is important to ratify the necessary concession laws to revise existing laws so that they are compatible with regional or international standard. In certain cases, however, normative action, for instance the adoption of new legislation, might not even be appropriate. Instead, further emphasis should be placed on enforcing current laws and regulations, the construction of an institutional structure, as well as the implementation of existing laws and bilateral or multilateral agreements.¹³⁷ The signing of the agreements would not affect the economic or legal condition in a landlocked country. To address the enforcement of legislation, negotiations, and structural reform, it is important to have the political will to do so.

4.5.2 Infrastructure Development

Both landlocked and transit countries put development of infrastructure on top priority. It entails not only the construction of new roads or rail tracks, but also regular maintenance, increased transportation supply capability, improved facilities management processes, even via information technology, in port or rail corporations, and a consistent transportation strategy. True "trade corridors" should be built to connect landlocked countries to world markets.

More than 66% of people believe transportation is the most important infrastructure for the nation's development, according to the survey. Nepal's development would be aided by major infrastructure as envisioned by the respondents during the research are as follows.

¹³⁷ Sarup, A. (1972). *Transit Trade of Land-Locked Nepal*, p.21. Cambridge University Press.

Table 4.3: Major infrastructures for Nepal’s development

Infrastructure	Responses	Percentage
Transportation	30	66.67
Health Facility	3	6.67
ICT	6	13.33
Industrial development	6	13.33

Source: Researcher Survey

Because of measuring issues and the subjective value of measurements, inter-country comparisons of infrastructure quality are challenging. According to the World Economic Forum's Global Competitiveness Report 2013–2014, Nepal's overall infrastructure quality was among the lowest in South Asia. With a ranking of 2.2. In terms of the quality of roads, railroads, air transportation, and electricity supply, Nepal came in last among South Asian countries.

Table 4.4: Overall infrastructure quality of South Asian countries (2013-2014)

Quality of Overall Infrastructure		Road	Rail road	Port	Air Transport	Electricity Supply
Bangladesh	2.8	2.8	2.4	3.5	3.2	2.2
Bhutan	3.9	4.3	N.A.	2.2	3.5	5.9
India	4.1	3.6	4.8	4.2	4.8	3.2
Nepal	2.2	2.7	1.1	2.7	3	1.6
Pakistan	3.2	4	2.5	4.5	3.2	2
Sri Lanka	4.4	4.7	3.6	4.2	4.8	5

Source: World Economic Forum (2020)

4.5.3 Inland Waterways

Though there is no specific statutory mechanism for river navigation in Nepal, the promise of this mode of transportation has been recognized through a variety of policies and laws. Only legally non-binding approaches and proposals has been proposed to improve navigation capability. The federal government has the authority

to develop treaties, laws, and rules regulating national and foreign waters, according to the Nepalese Constitution, which was promulgated in 2015.¹³⁸ The National Water Plan 2005, the National Transport Policy of 2002, and the Water Resource Strategy of 2002 all addressed the development of navigable waterways. Also the National Water Program was constrained by a timeline. The Water Resources Act of 1992 places navigation sixth on a list of water-use priorities, which regulates the use of water resources. The Ship Registration Act of 1971 creates a regulatory framework for the ownership of commercial and non-commercial ships.¹³⁹

Waterways have been mulled as an important instrument for the economic development and prosperity of Nepal. This will be another affordable means of connectivity between the two nations which makes transportation system speedy, smooth and cost-effective. Once the waterways come into operation, this will reduce Nepal's transportation costs of import/export by one-fourth. According to a study, goods-carrying ships with the capacity of six hundred metric tons can cruise in the Narayani and Koshi Rivers. In order to implement it, both sides India and Nepal need to formulate the working procedures and revise the Nepal-India Transit Treaty.¹⁴⁰ For poor country like Nepal, waterways are essential as their construction costs are cheaper than that of roads and railways.

In principle, Nepal would obtain alternative access to the sea owing to the confluence of Nepal's rivers with the Ganges. The existing condition of Nepal's rivers allows for the establishing a grid of inland waterways with the aim of achieving transboundary connectivity. Since water transportation is the most cost-effective and

¹³⁸ The Constitution of Nepal, 2015. Article 278, clause (2).

¹³⁹ The Ship Registration Act 1971, Chapter 3(3).

¹⁴⁰ De, Prabir. (2016). *Disentangling Transit Costs and Time in South Asia*, p.5. London: Overseas Development Institute.

environmentally friendly form of transportation, Nepal's trading costs could be reduced by establishing a cross-border navigation network linking India and Bangladesh. Importing a shipment to Nepal takes about 39 days, and exporting takes about 40 days, almost twice as long as dealing with India, which also happens to be Nepal's closest seaport. Nepal spends about 75% of the overall transshipment costs on transit-related costs.¹⁴¹ The competitiveness of Nepalese exports is affected as a result of these delays. However, in order to make access to the sea meaningful via inland waterways, an eventual agreement regulating waterway travel with India should be negotiated in such a way that policy-induced impediments are eliminated that actually plague overland transportation.

The Logistics Performance Index (LPI) of the World Bank is focused on operator surveys which can be used to measure Nepal's low infrastructure growth performance. The index is determined by many factors, including customs efficiency, facilities, foreign shipments, logistics expertise, monitoring and tracing, and timeliness. It's a scale of 1 to 5, with 1 being the lowest and 5 being the highest. Nepal is ranked the lowest country in South Asia in any of these categories.

Table 4.5: Logistics performance index (LPI) score

	L P I Score	Customs	Infra-structure	International shipments	Logistics competence	Trackin/tracing	Timeli-ness
India	3.08	2.77	2.87	2.98	3.14	3.09	3.58
Nepal	2.04	2.20	1.87	1.86	2.12	1.95	2.21
Pakistan	2.83	2.85	2.69	2.86	2.77	2.61	3.14
Sri Lanka	2.75	2.58	2.50	3.00	2.80	2.65	2.90

Source: World Bank (2019)

¹⁴¹ Ibid, p.7.

4.5.4 Regional/Sub-regional Coordination

Bilateral and multilateral agreements between neighboring countries are essential for a landlocked country's transition and improvement. Cooperation between neighboring countries is the most important factor, as it promotes the organization of cross-national issues. Regional intergovernmental groupings can play a leading role in infrastructure or transportation projects in encouraging coordination and collaboration at a level that will result in a dramatic change in a landlocked country's situation.¹⁴² A notable aspect of this regard is more regional assistance, including oversight, for such agreements and frequent approval procedures, as in the case of transit agreements. Borders should be less of a barrier to the movement of merchandise, and "international" transportation infrastructure should expand.

4.5.5 Trade and Economic Policies

In landlocked countries, trade is the most critical driver for economic growth. Trade disruption has a huge influence not only on the country's economy, but also on the political system as a whole. According to Nepal's economic history, India was the country's only successful trade transit channel and its single largest trading partner. Despite their strong social, cultural, and religious links, Nepal and India have had a disruptive relationship on many occasions. India has used trade restrictions, including trade embargos, to further its interests in a number of ways.¹⁴³

Assuming that land locking and effective economic policy or changes are linked, Nepal must reconsider its foreign trade composition and direction. The government's

¹⁴² Rana P.B. and Binod Karmacharya (2014) A Connectivity- Driven Strategy for Nepal: From a Landlocked to a Land-Linked State., ADBI Working Paper Series No. 498, Asian Development Bank Institute, September 2014, p.35. Retrieved from <https://www.adb.org/sites/default/files/publication/156353/adbi-wp498.pdf>. Accessed on 21 August 2020.

¹⁴³ Jayaraman, T., & Shrestha, O. (1976). Some Trade Problems of Landlocked Nepal, p.13. Asian Survey.

highest priority will continue to be the implementation of consistent and comprehensive transportation strategies to support the growing impact of infrastructure problems, infrastructure, and transit corridors. Governments must ensure that Nepal's transit law is not broken. Land locking would be a thing of the past, when land, sea, and airports would both serve as gateways to the origin and destination of real trade corridors.¹⁴⁴

4.5.6 Improvement of Connectivity

Because it was situated between the commercial, military, and geographical behemoths of India and China, Nepal was mostly ignored by the outside world until 1955, after things began to change, but not fully. It is viewed by the rest of the world as largely reliant on Indian imports and restricting maritime access through its ports. Subsequently, corrupting and pressuring the political leaders of the landlocked nation to stay away from joining the initiatives from the other neighboring country, despite Nepal being a sovereign country.¹⁴⁵

Nepal's journey on its relations with the neighbouring countries has seen interesting shifts from the policy of special relationship with India to the policy of equidistance between India and China or non-alignment or the Zone of Peace (ZoP). These policies, at best, remained on paper, such as in the presence of 1950 Treaty it was not possible to have equidistance with its neighbours or to remain neutral with an open border and free movement of people in India.¹⁴⁶ Nepal made attempts to utilize strained relations of India and China to its advantage but geography has placed its

¹⁴⁴ Ibid, p.17.

¹⁴⁵ Bhattarai, R. (2005). Geopolitics of Nepal and International Responses to Conflict Transformation, p.5, Kathmandu: FFP Publications.

¹⁴⁶ Muni, S. D. (1995). India and Nepal, a Challenging Relationship, p.p.33-37. New Delhi: Konark Publishers.

own limitations.¹⁴⁷ The effectiveness of the policies depends on whether neighbours want to play the game. Now, it is trying to enter a new phase of trans-Himalayan linkages or bridge between the two neighbours.

Nepal's geographic position sandwiched between two economic and emerging powers, has offered an immense opportunity for the country's prosperity. Nepal's foreign policy rhetoric has shifted from "Nepal is the Yam between two boulders" to "Bridge" linking the world's two largest economies. There are very prominent examples such as late King Birendra's proposal to develop Nepal as a gateway between South and Central Asia, former King Gyanendra's formal declaration to develop Nepal as a transit point between China and India, and former Prime Ministers Dr. Baburam Bhattarai and Pushpa Kamal Dahal's 'vibrant bridge' concept to suggest trilateral cooperation between India, Nepal, and China. The debate revolves around connectivity in all of them.¹⁴⁸

4.5.7 International Organizations

The challenge of landlocked countries is not secret, several international agencies inside and outside are there. The matter has been discussed in the United Nations system as well. The United Nations General Assembly conducts frequent progress reviews and the lead body The United Nations General Assembly monitors the progress on a regular basis and the UNCTAD as a lead body with specialist team is dealing with landlocked countries.¹⁴⁹ Regional organizations are focusing more on

¹⁴⁷ Ibid, p.41.

¹⁴⁸ Rana P.B. and Binod Karmacharya (2014) A Connectivity- Driven Strategy for Nepal: From a Landlocked to a Land-Linked State., ADBI Working Paper Series No. 498, Asian Development Bank Institute, September 2014, p.11. Retrieved from <https://www.adb.org/sites/default/files/publication/156353/adbi-wp498.pdf>. Accessed on 21 August 2020.

¹⁴⁹ UNCTAD (2017). Landlocked central Asian nations show potential beyond commodities, p.17. Retrieved from <https://unctad.org/news/landlocked-central-asian-nations-show-potential-beyond-commodities>. Accessed on 04 August 2020.

transportation, growth, customs reform, and trade facilitation in landlocked countries. The World Bank and other multilateral lending institutions are financing schemes to help landlocked countries improve their condition. Better alignment of the policies, activities and all foreign organizations and bilateral donor agencies must make recommendations.

4.6 Impact of Infrastructural Development in Nepal on Regional Security in the South Asia Sub-Region

The lack of physical facilities is at the top of the list of problems preventing South Asian countries from cooperating and connecting. Members of the SAARC would balance each other's development efforts. A series of transport corridors have been proposed by South Asian experts and the Asian Development Bank. Lahore-Delhi-Kolkata-Petrapole-Benapole-Dhaka-Akhaura-Agartala (2,453 km), Kathmandu-Nepalgunj-Delhi-Lahore-Karachi (2,643 km), Kathmandu-Birgunj-Kolkata-Haldia, and Thimpu-Phuentsholing-Jaigon-Kolkata-Haldia (1,039 km) are the most popular routes proposed.¹⁵⁰

According to a 2009 study that used data collection for a survey of 20 developing countries from 1980 to 2005, concluded that transport and communication infrastructures are indeed an efficient tool in fighting urban poverty.¹⁵¹ Another study found that changes in transportation networks (such as road density, air transportation,

¹⁵⁰ Sameer Suryakant Patil, Aparajita Mazumdar and Kamala Kanta Dash, Conference Report, 'SAARC Towards Greater Connectivity', p.11, 14th SAARC Summit, 2007, New Delhi, Institute of Peace and Conflict Studies Konrad Adenauer Foundation & India International Centre. Retrieved from <https://www.files.ethz.ch/isn/135556/CR08SAARC.pdf>. Accessed on 06 May 2021

¹⁵¹ World Bank Policy Research Working Paper No 4460, Infrastructure and Growth in Developing Countries: Recent Advances and Research Challenges, Posted 20 April 2016. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1080475. Accessed on 06 May 2021

railways, ports, and logistics) have resulted in increased trade flows.¹⁵² These studies reflect that infrastructure development helps in economic growth of a developing country like Nepal.

In Nepal's case, sustainable and affordable transportation infrastructure needed, which would necessitate the prudent use of public and private sector resources. Nepal should close the infrastructure gap if it is to achieve its development goals. Despite the impact of earthquakes and trade disruptions, Nepal has made significant strides in reducing poverty and the mutual prosperity through the development of road networks. In 2016, there were approximately 11,890 kilometers (7,388 miles) of paved roads, 16,100 kilometers (10,004 miles) of unpaved roads, and just 59 kilometers (37 miles) of railway line in the south.¹⁵³ Except for Simikot (Humla District), all district headquarters had been linked to the road network by 2018. However, due to the weak state of development of the road system, getting to markets is challenging.

The Millennium Challenges Corporation (MCC) agreement with Nepal (worth \$500 million) opens a new chapter in the US-Nepal relationship. The Nepal Compact, designed by MCC, aims to improve energy access and reduce transportation costs in Nepal. These investments will assist the Government of Nepal in providing basic services to the people, facilitating the flow of goods within the region, and creating new opportunities for private investment. Strengthening main infrastructure would help the country's economy develop more steadily, while also promoting peace, regional security, and poverty reduction.

¹⁵² Ismail, N. W., & Mahyideen, J. M. (2015). The Impact of Infrastructure on Trade and Economic Growth in Selected Economies in Asia. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2709294. Accessed on 06 May 2021.

¹⁵³ Kathmandu Post, October 10, 2018

A proposal for concessional funding was sent to the Ministry of Finance under the BRI to offer a concessional loan to Nepal of up to \$1 billion at a 3% interest rate.¹⁵⁴ However, little was known about the BRI projects' financing mechanisms. The Nepalese government, for its part, has established a list of 35 projects to be implemented under the BRI, which span a broad range of topics such as infrastructure growth, electricity, the construction of integrated checkpoints, the creation of a free trade zone, and irrigation.

The transport sector is vital for Nepal's development. Safe roads and airports help connect the population to markets and opportunities. For urban transport, enhancing road density in the Kathmandu Valley, establishing efficient public systems for mass movement, maintaining road safety, and planning for disaster management are key goals. Achieving these goals will require some focused policy interventions such as strengthening the legal, regulatory, and institutional framework for the road sector; improving the Strategic Roads Network through a programmatic approach; strengthening the airport sector; and strengthening the urban transport sector.

The government of Nepal recognizes the magnitude of the infrastructure gap and the urgency of addressing it. Despite having a low debt-to-GDP ratio, Nepal faces a difficult task in meeting the requisite investments. At the same time, China's interest in the BRI project, which is making India more sensitive, and the MCC package will be taken seriously by China for its security, potentially creating an unfriendly atmosphere in the region. Additionally, infrastructure development is one of the triggers of strain on forests, ecosystems, and habitats in Nepal, as development is gradually forced into forest areas to circumvent private land and property.

¹⁵⁴ Prof. Hari Bansh Jha (2019), 'Chinese Investments in Nepal in the Context of BRI', Vivekananda International Foundation. Retrieved from <https://www.vifindia.org/article/2019/october/11/chinese-investments-in-nepal-in-the-context-of-bri>. Accessed on 06 May 2021.

4.7 Correlation between Infrastructure and the Regional Security

To be able to determine the correlation between infrastructure development in LLDCs and regional security, the study used 50 respondents involving a total of 5 KIIs. The data gathered through a survey have provided a strong base to assess the relationship between them keeping infrastructural development in LLDCs as dependable variables and regional security as independent variable. The results were projected to Pearson Coefficient of Correlation. Some land transportations were also evaluated as connecting factors when defining the correlation between these variables and found to be highly correlated.

The following table projected the summary of data collection in establishing the correlation between two independent and dependent variables including relevant intervening variables.

Table 4.6: Infrastructure and regional security correlation

Independent Variable	Intervening Variables		Dependent Variable	Remarks
	Variables	Score		
Regional dynamics	Slow infrastructure development progress in LLDCs (Respondent's opinion)	91.11%	Infrastructural development	Table 2.2, Appendix 'E' question no.5 & 6
	Political instability	71.11%		
	Trade relations/Transportation	77.78%		
Regional security in Asia	Regional cooperation	46.67%	Infrastructural development in LLDCs	Table 2.2, 3.1, Appendix 'E' question no.8
	Military cooperation	22.22%		
	Infrastructural development	31.11%		
Security setbacks in Asia	Internal instability	53.33%		
	Landlockedness	26.67%		
Challenges faced by LLDCs	Infrastructure levels in transit nations	44.44%		
	Political challenges	40%		
South Asia	Transportation	79	Major	Table 2.1,

sub-regional security	Drinking water	57	infrastructural development	Table 3.3
	Communication	50		
	Electricity	36		
	Health facilities	21		
	Lack of regional cooperation	60%	Regional security factors	
	Political instability within	57.78%		
	Lack of infrastructure	55.56%		
Land linkedness of Nepal	Regional cooperation	55.56%	Infrastructure development in Nepal	Appendix 'E' question no.14
	Inland connectivity	33.33%		

Source: Researcher Survey

The table shows correlation between variables affecting to regional security. The table depicts the relationship between slow infrastructural development in LLDCs and how they have an effect on regional security. It denotes high connection between regional security and infrastructure growth.

The study distinctly identified that LLDCs can define themselves as land linked status by modernizing transportation, power generation and transmission, and communication service networks. Besides that, the researcher discovered that LLDCs can improve regional security by establishing regional bilateral and multilateral security agreements with maritime nations. The study found that countries invest in road networks to establish land-link with other nearby countries with access to the sea. The study also established that deeper regional integration as a result of infrastructural development that can contribute to higher level of economic success of landlocked country and regional security particularly shared resources like drinking water, communication and electricity.

The majority of respondents, representing almost 96 percent agreed that 'Infrastructure development plays vital role in regional security'. This confirmed the hypothesis I which was postulated that there is 'Likely unique regional and

international dynamics of infrastructural development in LLDCs'. Comparatively LLDCs face unique geographical difficulties in the region and must deal with significant logistics, transportation, and infrastructure problems. The construction of these infrastructures in LLDCs has a direct connection to the regional and international environment.

Transportation infrastructure as the key determinant of regional security, is supported by the evidence that 78 percent participant think it as the most important determinant of regional security, indicating that LLDC governments could prioritize this element. This survey further confirmed the hypothesis II which was the 'Infrastructural development in landlocked states is positively correlated with regional security in Asia'. Certain wealthy landlocked countries have well-built infrastructures, but the majority of LLDCs have less developed infrastructures. The majority of such countries' economic problems, especially in Asia, are caused by the effect of inadequate infrastructure, which eventually may lead to regional insecurity. To this end, it is important that LLDCs put more resources to infrastructure so that the development can spread to as many countries as possible for regional security. It underscores the need for free movement of personnel, goods and services. Thus development of infrastructure in LLDCs will have positive relation with regional security.

$$r = \frac{\sum(x - \bar{x})(y - \bar{y})}{\sqrt{[\sum(x - \bar{x})^2](y - \bar{y})^2]}}$$

Pearson Correlation coefficient:

$$r = \frac{\sum xy - n\bar{x}\bar{y}}{(n-1)SD(x)SD(y)}$$

Dependent Variable: Infrastructure Development

Mean

$$\bar{x} = 144.6$$

Standard Deviation

$$SD(x) = 19.3796$$

Independent Variable: Regional Security $\bar{Y} = 66.93$

Standard Deviation

$$SD(y) = 23.6476$$

Pearson Coefficient of correlation (r) = $5426.6/6412.0609 = 0.846$.

The data shows the relationship between infrastructural development and regional security as a key to consider in the attainment of regional stability to be achieved. The correlation coefficient of 0.846 indicates a strong positive correlation between the infrastructure and regional security. Hence the infrastructure development plays a positive role in the regional security.

From the qualitative data (Q. No. 18 Appendix 'D') it was found that infrastructure is a key driver of economic growth because it promotes trade by facilitating the flow of commodities, people, and market access. When movement of individuals, products and services are made easy, citizens will be able to participate in socioeconomic development. Sharing of transportation infrastructure facilities and develop connectivity enhance people to people relations. Thus, exchange of information, technology, trade and commerce helps to enhance to improve the regional security. Various security measures are in place along the route for security reasons, which necessitates close cooperation between trade partner countries. Any problems addressed in one country would assist the next country in moving on without needless

disruptions or detrimental influences. There will be no negative transnational consequences. Interdependence improves as a result of interconnectedness which decreases the probability of war in the area. This ultimately enhances the regional security. This supports the hypothesis III which presupposed the 'Infrastructural development in Nepal has a likely positively impact on regional security in the South Asia sub-region.

4.8 Chapter Summary

This chapter has underscored the role of infrastructure in regional stability. It is noted that for security to be achieved the region; the LLDCs need to improve infrastructure in transport, water, health and overall inland connectivity. South Asian states are confronted with a variety of traditional and non-traditional security challenges that are intertwined. Extra-regional forces such as the US, the UK, and other western powers are now engaged in regional politics to promote and protect their own strategic interests. However, the region's countries retain a mixed form of friendly relationship when it comes to cross-border trade and business. Cross-border connectivity does not generally include the economic dimension, but is also deeply embroiled in the geopolitical conundrum. Power politics, an area of influence, equally perceived or real threat to immediate neighbors plays an important role.

Various infrastructure construction projects are currently underway in all of the south Asian nations, including Nepal. Nepal is actively developing a number of infrastructure construction projects; more are on the track. It can open a bridge to both the countries and should transform it from landlocked to linked countries. The chapter addressed the issue of ongoing infrastructural development in Nepal and its possible relationship with the regional security in the South Asia sub-region. The following

chapter summarizes the summary of findings, conclusion and recommendations. The areas for further study also are highlighted.

CHAPTER FIVE

Summary of Findings, Conclusion and Recommendations

5.1 Summary of Findings

This research sought to examine the role of infrastructural development in landlocked states and their connection to regional security enhancement more focusing in South Asia with the case of Nepal. The study identified and evaluated the importance of infrastructural development for regional security and also for economic growth. The study was guided by three objectives namely; to examine the regional and international dynamics of infrastructural development in landlocked countries, determine the role of infrastructural development in landlocked states in the enhancement of regional security in Asia and lastly analyze critically the impact of infrastructural development in Nepal and its linkage to regional security in the South Asia sub-region.

5.1.1 International Dynamics of Infrastructural Development in Landlocked Countries.

From the study, it was found that majority of the participants (75.56%) agreed that landlockedness is the major setback for Nepal in developing infrastructure. Many of the participants (55.56%) also agreed that with the help of regional cooperation, Nepal can be transferred from landlocked to land-linked. Thus, it can be seen international dynamics could aid in infrastructural development in landlocked countries by addressing landlockedness as well. Participants also described that infrastructure may be established with regional and international development partners through joint ventures or public-private partnerships. Investing in roads, railways, and land

transportation are also viable options which also emphasize international role in infrastructural development. To achieve sustainable development goals, a security platform must be developed. It was also found out that transportation is one of the major one among the infrastructures that plays major role in regional security of landlocked countries and for Nepal's development. Execution of UN resolution on the rights of landlocked countries and respect to neighbours as sovereign country by the maritime countries could facilitate infrastructural development in landlocked countries by international dynamics.

5.1.2 Infrastructural Development in Landlocked States and Regional Security in Asia.

Looking at the infrastructural development in landlocked states, out of 45 participants, majority 82.22% agreed that landlocked countries are slowly progressing in infrastructure development. Many believed that dependence upon infrastructure levels in transit nations as the challenges faced by landlocked countries followed by time delays due to high administrative burden. 53.33% believed internal instability followed by 35.56% participants who believed lack of infrastructure as the major regional security setbacks in Asia particularly in Landlocked Countries. In context of Nepal, most of the participants (66.67%) believed that transportation is the major infrastructure for Nepal's development. 75.56% respondents agreed that landlockedness is the major setback for Nepal for developing infrastructure and regional security. This supports that landlockness has resulted in slow development of infrastructure which has also affected regional security of Nepal as a landlocked country and as Asia as whole. Additionally, the majority of interviewees, who represent about 96% of the interviews, agree that 'Infrastructure development plays vital role in regional security'. Transportation infrastructure was chosen by 78% as

the most important determinant of regional security, indicating that LLDC governments could prioritize this element.

5.1.3 Infrastructural Development in Nepal and its Linkage to South Asia Sub-Regional Security.

It was found out that transportation is the major infrastructure among the infrastructure that plays major role in regional security of landlocked countries and for Nepal's development. Based on a thorough examination, it is distinctly identified that LLDCs can define themselves as land linked status by modernizing transportation, power generation and transmission, and communication service networks. Besides that, the researcher discovered that LLDCs can improve regional security by establishing regional bilateral and multilateral security agreements with maritime nations. A strong report is presented that countries invest in road networks to establish land-link with other nearby countries with access to the sea. Lastly, the study established deeper regional integration as a result one or more of above discussed factors can contribute to higher level of economic success of landlocked country and regional security.

The researcher also made a correlation between infrastructure development and regional security enhancement, which was 0.846, indicating a clear positive correlation between these aspects. Hence, infrastructure development contributes to regional stability.

Therefore, a procedure must be formulated to ensure that governments of landlocked countries and their maritime neighbours have shared trust in one another. Countries must believe in the importance of bilateral and multilateral agreements in ensuring a secure regional environment, and they must share their good governance and

experiences. In this situation, a landlocked nation must improve citizens' skills, establish productive international ties, build formidable infrastructure within the country, and participate in the development of maritime neighbors' infrastructure.

5.2 Conclusion

Transportation is a vital component of regional stability and growth in landlocked countries like Nepal. Infrastructure development has been discovered to have a significant impact on regional stability. This has been proved according to the majority of interviewees (approximately 96 percent). Infrastructure development and regional security enhancement have a correlation of 0.846, suggesting a positive relationship.

By forming regional bilateral and multilateral security agreements with maritime nations, LLDCs will strengthen regional security. According to an analysis, countries invest in road networks to create land links with neighboring countries in order to gain access to the sea. It was discovered that one or more of the factors listed above would lead to the economic prosperity of a landlocked country and regional security.

Infrastructural development played major role in regional security as well country development. Transportation was found to be the major infrastructure that should be developed in landlocked countries for which regional cooperation and inland connectivity could be done.

5.3 Recommendations

In order to meet the growing challenges and opportunities seen in different aspects among Nepal, India and China, some pragmatic step may require to adopt. Overall, the landlocked countries can enhance the regional security in the following ways.

- By entering into regional bilateral and multilateral security arrangements with maritime states LLDCs may involve in developing infrastructure to improve the economy of the country. Stability and security can be achieved in the country as the economy grows. Therefore, LLDCs should work together with their maritime neighbours in developing the infrastructures, particularly in the transportation sector and social services.
- With the improvement of good transportation network and other social services infrastructures the citizen will be able to engage in socio economic development hence the society will be stable. As a results the whole region will be secure. Government should take special considerations on free international movement of transport and take any measures against the violation of its legitimate right.
- Possible approaches can be investing on highways, railway network and land transport through linking the regions to intensive land transport. Common infrastructure development programs such as trans-boundary, one stop border points, exchange of information on law enforcement etc. should be implemented.
- Infrastructure development is an enabler for economic development as it facilitates trade through movement of goods, persons and access to market. ICT

is also dependent on necessary infrastructure to enable capital flows. Hence developing infrastructure will enable economic transformation and better livelihoods which translate to improved human and physical security as the populations will not fight over resources if they are satisfied.

- Identify specific transport corridors for development and establish Nepal as a transit hub in the South Asia that would lead to greater regional and global trade integration.

References

- ADB (2013). Asia's Economic Transformation: Where to How, and How Fast? Key Indicators for Asia and the Pacific 2013 Special Chapter. Manila
- ADB (2016). Gender Statistics for the Pacific and Timor-Leste. Manila.
- ADB (2017). Meeting Asia's Infrastructure Need, Mandaluyong City, Philippines: Asian Development Bank.
- Adhikari, Monalisa. (2014). "Politics and Perceptions of Indian Aid to Nepal." *Strategic Analysis* 38 (3).
- Adler, W. D., & Polsky, A. J. (2010). Building the New American Nation: Economic Development, Public Goods, and the Early U.S. Army. *Political Science Quarterly*, 125(1). Retrieved from <https://doi.org/10.1002/j.1538-165X.2010.tb00669.x>. Accessed on 07 August 2020.
- Aid Asia, 2019. Retrieved from <http://aidasia.org/nepal-infrastrure-2019> Accessed on 05 April 2021
- Ake E. Andersson and David Emanuel Andersson (2017). *Time, Space and Capital: New Horizons in Institutional and Evolutionary*. Edward Elger: Cheltenham
- Anselin, L., and S. Rey (1991). Properties of tests for spatial dependence in linear regression models. *Geographical Analysis* 23.
- Bhattacharai, R. (2005). *Geopolitics of Nepal and International Responses to Conflict Transformation*. Kathmandu: FFP Publications.
- Buzan B., Weaver O. (2003). *Regions and Powers: The Structure of International Security*, Cambridge University Press, Cambridge.
- César Calderón and Luis Servén (2004). *The Effects of Infrastructure Development on Growth and Income Distribution*. Retrieved from <https://core.ac.uk/download/pdf/7355059.pdf>. Accessed on 09 August 2020.
- Chairman's Statement at the end of the First ARF Meeting, Bangkok, 25 July 1994.
- Chang, Roberto, Linda Kaltani and Norman Loayza (2009). Trade can be good for growth: the role of policy complementarities. *Journal of Development Economics* 90.
- China's State Council Information Office, China's Policies on Asia-Pacific security cooperation, January 11, 2017.
- Collier, Paul (2007). *The Bottom Billion: Why the Poorest Countries Are Failing and What Can Be Done About It*. Oxford University Press.
- Country Watch (2002). *Afghanistan Foreign Relations*, Country Watch. 2002.
- Dahal, D. R. (1997). *Geopolitics of Nepal, Survival Strategy of a Small States*. Kathmandu: NEFAS.

- De, Prabir. (2016). *Disentangling Transit Costs and Time in South Asia*. London: Overseas Development Institute.
- Dinar, A. B. (1996). "Great Lakes." UN DHAIRIN Weekly Round Up 21.
- Dion, R. (2000). The Decline of Central Asian Integration. Central Asia Caucasus Analyst Biweekly Briefing, John Hopkins University, Baltimore MD.
- Double Landlocked Countries (2020). The Two Double Landlocked Countries. Retrieved from www.worldpopulationreview.com. Accessed on 29 November 2020.
- Earley, M.R. (2018). Transport Challenges and Opportunities for Landlocked Countries for achieving Sustainable Development Goals (SDGs). UNITED NATIONS.
- Economic and Social Commission for Asia and the Asia Pacific (ESCAP) (2015). Asia-Pacific Countries with Special Needs Development Report 2015. Building Productive Capacities to Overcome Structural Challenges. Sales No. E.15. II. F.9. Bangkok.
- ESCAP. (2015). "Reducing Trade Costs: Key Findings from ESCAP's Trade Process Analysis Database." Retrieved from www.unescap.org/resources/reducing-trade-costs-key-findings-escap-trade-process-analysis-database-tpad. Accessed on 02 January 2021.
- Economic and Social Survey of Asia and the Pacific (2017): Governance and Fiscal Management. United Nations publication Sales No. E.17.II.F.8 Copyright © United Nations, New York.
- Faye, John McArthur and Jeffrey Sachs Thomas Snow, Michael (2003). Country case studies on the challenges facing landlocked developing countries. Human Development Report Office Occasional Paper.
- Faye, M.L., MacArthur, J.W., Sachs, J.D., & Snow, T. (March, 2004). The Challenges Facing Landlocked Developing Countries. *Journal of human development, Volume 5 Issue (1)*.
- Fernandes, M. D. (2017). *Bilateral Transit and Transportation Agreements of LLDCs: Benefits and Bottlenecks - Case India and Nepal*. Ulaanbaatar: International Think Tank for Landlocked Developing Countries.
- Fernando and Jayshwal (2020). *From landlocked to land-linked: OBOR in Nepal*. Retrieved from <https://www.oboreurope.com/en/obor-in-nepal/>. Accessed on 11 August 2020.
- Feyrer, James (2009). Trade and Income – Exploiting time series in Geography. NBER working paper 14910.
- Frischmann, B.M. (1976). An Economic Theory of Infrastructure and Commons Management. Minnesota Law Review.
- Gaire, H. N. (2014). Infrastructure Development in Nepal. Retrieved from New Business Age Pvt. Ltd: <http://www.newbusinessage.com/MagazineArticles/view/1030>, Accessed on 11 August 2020.

- Gautam (2019). Sustainable Infrastructure Development: Nepal's Zeal. Retrieved from <https://www.researchgate.net/publication/336890498>, Accessed on 13 August 2020.
- Geoff Dyer (2014). "US v China: is this the new cold war?" Financial Times, 20 February 2014.
- Glassiner, M. I. (1998). Transit rights for land-locked states and the special case of Nepal. Sage Publications.
- Hainer Hanggi, Ralf Roloff & Jurgen Ruland (2006). Interregionalism and International Relations. London: Routledge.
- Hanks, Reuel R. (2010). Global Security Watch - Central Asia. Santa Barbara, California: Praeger.
- Hoffmann, (2007). Geography Against Development A Case for Landlocked Developing Countries - by Anwarul Chowdhury and Sandagdorj Erdenebileg. Natural Resources Forum. Retrieved from https://doi.org/10.1111/j.1477-8947.2007.135_4.x1. Accessed on 07 August 2020.
- IMF (1999). Bhutan: Statistical Annex to IMF Staff Country Report 99/63. Washington, IMF.
- Infra Africa (2001). Review of Progress in the Development of Transit Transport Systems in Eastern and Southern Africa. New York, UNCTAD. UNCTAD/LDC/115.
- International Monetary Fund (2015). World Economic Outlook
- International Monetary Fund (2017). Mongolia: 2017 Article IV Consultation, December 2017.
- International Monetary Fund (IMF) (2018). Staff report for the 2018 Article IV consultation – Debt Sustainability Analysis. Washington, D.C.
- Ismail, N. W., & Mahyideen, J. M. (2015, December 30). The Impact of Infrastructure on Trade and Economic Growth in Selected Economies in Asia. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2709294 Accessed on 06 May 2021.
- Iyer, Lakshmi, and Indhira Santos (2012). Creating jobs in South Asia's conflict zones. Policy Research Working Paper No. 6104. Washington, D.C.: World Bank.
- Jayaraman, T., & Shrestha, O. (1976). Some Trade Problems of Landlocked Nepal. Asian Survey.
- Kathmandu Post, October 10, 2018
- Koirala, M.P. (2015). Contribution of Risk Factors for Infrastructure Development of Nepal. *The Kathmandu Post*.
- Kumar. (2015). Embracing Sub-regionalism in South Asia. Policy Brief.
- Kumar, A. (2016). Nepal PM KP Oli's Visit to China.

- Lahiri & Masjidi (2012). Landlocked Countries: A Way to Integrate with Coastal Economies. *Journal of Economic Integration* Vol.27 MA, Qecemût 2012, 505-519.
- Louis Brennan and Philomena Murray (2015). Drivers of Integration and Regionalism in Europe and Asia: Comparative Perspectives. London: Routledge.
- Liu Qingcai and Zhao Xuan (2014). “Strategic Thinking of China Russia’s Pushing Forward the Establishment of Asia-Pacific Security and Cooperation Architecture,” *Northeast Asia Forum*, No. 3.
- MacKellar, Landis, Andreas Worgotter and Julia Worz (2000): “Economic Development problems of landlocked countries”, *Transition Economic Series* No.14.
- Marteau, Jean Francois (2010). *The Cost of Being Landlocked*. The International Bank for Reconstruction and Development: Washington DC 20433.
- McNamara, R.S. (1990). *The essence of security*. New York: Harper and Row.
- Michael Cox (2016). Not just ‘convenient’: China and the Russia’s new strategic partnership in the age of geopolitics, *Asian Journal of Comparative Politics*, Volume 1, Number 4.
- Mishra 2002, Spotlight, May 1991.
- Morichi, S., Acharya, S.R. (2011). Strategic Perspectives on Intercity Transport Development in Asian Countries. *Proc. East. Asia Soc. Transp. Stud.* 8.
- Muni, S. D. (1995). *India and Nepal, a Challenging Relationship*. New Delhi: Konark Publishers.
- "Nepal: Economy". Asian Development Bank, 2016. Retrieved from <https://www.adb.org/countris/Nepal.economy>. Accessed on 21 August 2020.
- Nepali Army (2021). *Dibyopadesh*, Kathmandu.
- Nick Bisley (2009). *Building Asia’s Security*, Abingdon/New York: Routledge/International Institute for Strategic Studies.
- NOPS (2018). *Infrastructure: Underpinning Sustainable Development*.
- Ohn J. Mearsheimer, “A Realist Reply,” *International Security*, Summer 1995.
- Paudel, D., & Le Billon, P. (2018). Geo-logics of power: disaster capitalism, Himalayan materialities, and the geopolitical economy of reconstruction in post-earthquake Nepal Geopolitics.
- Paudel, R.C (2014). ‘Economic Growth in Developing Countries: Is Landlockedness Destiny?’ January 2014 Working Paper No. 2014/01
- Pechata, V. (1973). *The Right of Access to the Sea. Land-locked countries of Africa*. Z. Cervenka. Uppsala, Scandinavian Institute of African Studies.
- Picketty, Thomas (2014). *Captial in the Twenty-First Century*. Arthur Gold hammer, trans. Belknap Press, Harvard University Press. Cambridge.

- Pradhan, G. M. (1990). *Transit of Land-Locked Countries and Nepal*. Jaipur: Nirala Publications. Retrieved from https://projekter.aau.dk/projekter/files/42680865/new_pdf_u Phar.pdf Accessed on 12 October 2020.
- Pradhan, R. P., & Bagchi, T. P. (2013). Effect of transportation infrastructure on economic growth in India: The VECM approach. *Research in Transportation Economics*, Volume 38 issue (1), p.p. 139–148. Retrieved from <https://doi.org/10.1016/j.retrec.2012.05.008>. Accessed on 07 August 2020.
- Prof. Hari Bansh Jha (2019), ‘Chinese Investments in Nepal in the Context of BRI’, Vivekananda International Foundation. Retrieved from <https://www.vifindia.org/article/2019/october/11/chinese-investments-in-nepal-in-the-context-of-bri> Accessed on 06 May 2021.
- Pyakurel, B. (2013). *Nepal’s Development Tragedy*. Kathmandu: 2013.
- Radalet, S. and J. Sachs (1998). Shipping Costs, Manufactured Exports, and Economic Growth. Presented at the American Economic Association annual meeting, January 1998.
- Rana P.B. and Binod Karmacharya (2014) A Connectivity- Driven Strategy for Nepal: From a Landlocked to a Land-Linked State., ADBI Working Paper Series No. 498, Asian Development Bank Institute, September 2014. Retrieved from <https://www.adb.org/sites/default/files/publication/156353/adb- wp498.pdf>. Accessed on 21 August 2020.
- Reis, Jose Guilherme; Farole, Thomas. (2012). Trade Competitiveness Diagnostic Toolkit. World Bank. © World Bank. <https://openknowledge.worldbank.org/handle/10986/2248> License: CC BY 3.0 IGO”.
- Reuters (2002). Congo Parties-Strike Peace Deal in South Africa. Reuters, 17 December 2002.
- Romp and De Haan (2007) survey the effect of public investment and infrastructure on growth.
- Sachs, J. D. (2004). The Challenges Facing Landlocked Developing Countries. *Journal of Human Development*.
- Sameer Suryakant Patil, Aparajita Mazumdar and Kamala Kanta Dash, Conference Report, ‘SAARC Towards Greater Connectivity’, 14th SAARC Summit, 2007, New Delhi, Institute of Peace and Conflict Studies Konrad Adenauer Foundation & India International Centre. Retrieved from <https://www.files.ethz.ch/isn/135556/CR08SAARC.pdf>. Accessed on 06 May 2021.
- Sanchez, R. J., Hoffmann, J., Micco, A., Zsolitto, G. V. P., Sgut, M. N., & Wilmsmeier, G. (2003). Port Efficiency and International Trade: Port Efficiency as a Determinant of Maritime Transport Costs. *Maritime Economics & Logistics*, 5.
- Sarup, A. (1972). *Transit Trade of Land-Locked Nepal*. Cambridge University Press.
- Singh, B. (2015). China's strategic foray in the post-monarchy Nepal: Implications for India.

- Sitaula, T. (2014). 'Infrastructure Development in Nepal: Challenges and Opportunities for Engineer'. Retrieved from <https://www.yumpu.com/en/document/view/34213915/infrastructure-development-in-nepal-society-of-consulting>. Accessed on 21 August 2020.
- Smith A (1776). *An Inquiry into the Nature and Causes of the Wealth of Nations* 2 vols. Edited by Edwin Caanan University of Chicago, Chicago, IL
- Solow, R. M. (1956). A Contribution to the Theory of Economic Growth. *The Quarterly Journal of Economics*, 70 (1). Retrieved from <https://academic.oup.com/qje/article-abstract> Accessed on 17 July 2021.
- Su, S., Ke, J., & Lim, P. (2011). The Development of Transportation and Logistics in Asia: An Overview. *Transportation Journal*, 50 (1). Retrieved from doi:10.5325/transportationj.50.1.0124 Accessed on 26 November 2020.
- Tavitan, N. (2001). *The Blockade of Armenia by Turkey: None of your Business?* Geneva, Forum of Armenian Associations of Europe.
- Thapa, P. (2014). Theory of Infrastructure Development In Nepal. *The Rising Nepal*, Retrieved from <http://therisingnepal.org.np/news/2607>, Accessed on 20 August 2020.
- Thapa, R. (2010). Article V of General Agreement on Tariffs and Trade 1994: From the Perspective of Ensuring Freedom of Transit to Landlocked Countries. *Business Law Journal*, Volume 15.
- The Constitution of Nepal, 2015.
- The Ship Registration Act 1971.
- United Nations Conference on Trade and Development, *Landlocked developing countries*. Retrieved from <https://unctad.org/topic/vulnerable-economies/landlocked-developing-countries>. Accessed on 04 August 2020.
- UNCTAD (2001). *Transit Systems of Landlocked and Transit Developing Countries: Recent Developments and Proposals for Future Action*. New York, UNCTAD. TD/B/LDC/AC.1/17.
- UNCTAD (2017). *Landlocked central Asian nations show potential beyond commodities*. Retrieved from <https://unctad.org/news/landlocked-central-asian-nations-show-potential-beyond-commodities>. Accessed on 04 August 2020.
- UNCTAD (2020). *World Investment Report 2020*. Retrieved from https://unctad.org/system/files/official-document/wir2020_en.pdf . Accessed on 20 November 2020.
- United Nations (2002), *Specific actions related to the particular needs and problems of landlocked developing countries: preparatory process for the International Ministerial Meeting on Transit Transport Cooperation. Report of the Secretary General*" (A/57/340), New York, General Assembly, 23 August 2002.
- United Nations. (2007). *Regional cooperation in transit transport: Solutions for landlocked and transit developing countries*. Geneva: United Nations.

- United Nations (2017). Asia-Pacific Countries with Special Needs Development Report. Sales No. E.17.II.F.9.
- UN-OHRLLS Global Report 2017.
- UNOPS (2018). *Infrastructure: Underpinning Sustainable Development*.
- VPoA (2014). *Vienna Programme of Action for LLDCs*.
- Wagle, R. K. (2014). Nepal plans road infrastructure expansion. *World Highways*, pp. <http://www.worldhighways.com/sections/key-projects/features/nepal-plans-road-infrastructure-expansion/> Accessed on 21 August 2020.
- WHO/CCU/17.09, Landlocked Developing Countries Health and WHO (Country Presence Profile), Retrieved from <https://apps.who.int/iris/bitstream/handle/10665/255803/WHO-CCU-17.09-eng.pdf;jsessionid=4666DC2653AB0EBFE6F1324D42F2188E?sequence=1>. Accessed on 1 November 2020.
- World Bank (2002). *Global Economic Prospects and the Developing Countries*. Washington, World Bank.
- World Bank (2015). *Trade, Transport and Telecommunications in the South Caucasus: Current Obstacles to Regional to Regional Cooperation*. Washington, World Bank
- World Bank Policy Research Working Paper No 4460, *Infrastructure and Growth in Developing Countries: Recent Advances and Research Challenges*, Posted 20 April 2016. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1080475 Accessed on 06 May 2021
- WTO (2015). *World Trade Report 2015: Speeding up Trade: Benefits and Challenges of Implementing the WTO Trade Facilitation Agreement*. Retrieved from https://www.wto.org/english/res_e/publications_e/wtr15_e.htm. Accessed on 02 January 2021.
- Ye Hailin, (2016). "India's South Asia Policy and Its Impact on OBOR," *Indian Ocean Economic and Political Review*, 2016.02.
- Zhu Liqun (December 1999). "Cooperative Security and China's Stand," *Foreign Affairs Journal* (Beijing).

DETERMINING SAMPLE SIZE

Sample size - 50

Sampling method – Random sampling and purposive sampling for interview.

Professors/Senior Military Officers- 5 (KII)

National Security and Strategy Course 23, 2020-21 Participants, Kenya - 22

Tribhuvan University Students, Nepal -23

FGD (5 persons) among National Security and Strategy Course 23, 2020-21

Participants.

The sample size was determined as per the following formula:

$$n = \frac{z^2 pq}{d^2}$$

Where, n= minimum sample size

z= standard normal deviate usually set at 1.96 which correspond to 95% confidence level

p= proportion of the target population estimated to have a particular characteristic = 93% =0.93

So, q = 1-p = 1 – 0.93= 0.07

d= margin of error (precision), usually set at 5% = 0.05

The required sample size:

$$n = \frac{z^2 pq}{d^2}$$

$$= \frac{(1.96)^2 \times 0.93 \times 0.07}{(0.05)^2}$$

$$= 100$$

CLOSE/OPENED ENDED STRUCTURED QUESTIONNAIRES

Dear Sir/Madam,

1. Jambo & Namaste. I, Jyotindra Mahat, psc (n & p), participant of NDC 23 - 2020/21, am conducting a research as part of **Masters in International Studies** package on the topic **'Role of Infrastructural Development of Landlocked Countries in Enhancing Regional Security: A Case of Nepal'**. The landlocked countries are facing many difficulties such as remoteness from major markets, considerable distance from the coast, lack of infrastructure, or an inadequate legal or institutional environment. Hence, it's clearly visible that landlocked countries face greater problems and risks in terms of transport than countries which have direct access to international sea routes.

2. Infrastructure is also basic physical, organizational and geographical structure of the environment and is most essential factor for the operation of a society, human-natural interaction and socio-economic development. The infrastructure development can be achieved by mobilizing the pace of natural, social and human resources management. The highways, railway networks and land transport facilitation measures; special attention has been given to LLDCs in order to link them with the regional land transport network.

5. Any information I obtain from you during the research will be kept strictly confidential and used only for research purpose. Your participation in this research is completely voluntary. You are free to withdraw your consent and discontinue participation in this study at any time. Please choose the correct options you think suitable and your valuable comments on the followings will be priceless for my research.

Jyotindra Mahat

Participant

NDC 23 - 2020/21

Cell: +254759145650

Email: jyolux2060@gmail.com

Dear respondents, please choose the correct options you think suitable.

Nationality			
Gender	Male	Female	
Education	Bachelors	Masters	Ph D

Q.1 Infrastructure development plays vital role in regional security.

- (a) Agree
- (b) Disagree

Q.2 What is the major infrastructure for development?

- (a) Transportation
- (b) Information Technology
- (c) Health Facility
- (d) Industrial Development
- (e) Electricity
- (f) Drinking Water

Q.3 What are the current sector approaches and good practices in infrastructure development in LLDCs?

- (a) Transportation Infrastructure Development
- (b) ICT Infrastructure Development
- (c) Industrial Development
- (d) Health Facility
- (e) Other Infrastructure Development

Q.4 What are the key factors of regional security?

- (a) Infrastructure Development
- (b) Political Stability
- (c) Military Cooperation
- (d) Others (.....)

- Q.5 Transportation infrastructure is the key determinant of regional security.
- (a) Agree
 - (b) Disagree
- Q.6 LLDCs have been progressing in infrastructure development?
- (a) Rapidly
 - (b) Slowly
 - (c) Not progressing
- Q.7 What are the challenges faced by LLDCs?
- (a) Dependence upon infrastructure levels in transit nations
 - (b) Time delays due to high administrative burden
 - (c) Political challenges
- Q.8 What are the factors affecting regional security of LLDCs?
- (a) Infrastructure Development
 - (b) Regional Cooperation
 - (c) Stability within
- Q.9 What are the regional security setbacks in Asia particularly in LLDCs?
- (a) Landlockedness
 - (b) Internal Instability
 - (c) Lack of infrastructure
 - (d) Others (.....)
- Q.10 What are the regional security factors in South Asian region?
- (a) Lack of regional cooperation
 - (b) Political instability within
 - (c) Lack of infrastructure
 - (d) All

- Q.11 What are the challenges of infrastructure development in Nepal?
- (a) Political Instability
 - (b) Landlockedness
 - (c) Lack of planning
 - (d) Others (.....)
- Q.12 Which is the major infrastructure for Nepal's development?
- (a) Transportation
 - (b) Health Facility
 - (c) Information communication technology
 - (d) Industrial development
- Q.13 Landlockedness is the major setback for Nepal for developing infrastructure and regional security.
- (a) Agree
 - (b) Disagree
- Q.14 How can Nepal be transferred from landlocked to land linked?
- (a) Regional Cooperation
 - (b) Cooperation with great powers
 - (c) Inland Connectivity
 - (d) Others (.....)

OPEN ENDED STRUCTURED QUESTIONNAIRE

Dear Sir/Madam,

1. Jambo & Namaste. I, Jyotindra Mahat, psc (n & p), participant NDC 23 - 2020/21, am conducting a research as part of **Masters in International Studies** package on the topic **'Role of Infrastructural Development of Landlocked Countries in Enhancing Regional Security: A Case of Nepal'**. The landlocked countries are facing many difficulties such as remoteness from major markets, considerable distance from the coast, lack of infrastructure, or an inadequate legal or institutional environment. Hence, it's clearly visible that landlocked countries face greater problems and risks in terms of transport than countries which have direct access to international sea routes.

2. Infrastructure is basic physical, organizational and geographical structure of the environment and is most essential factor for the operation of a society, human-natural interaction and socio-economic development. The infrastructure development can be achieved by mobilizing the pace of natural, social and human resources management. The highways, railway networks and land transport facilitation measures; special attention has been given to LLDCs in order to link them with the regional land transport network.

3. Any information I obtain from you during the research will be kept strictly confidential and used only for research purpose. Your participation in this research is completely voluntary. You are free to withdraw your consent and discontinue participation in this study at any time. Your valuable comments on the followings will be priceless for my research.

Jyotindra Mahat

Participant

NDC 23 - 2020/23

Cell: +254759145650

Email: jyolux2060@gmail.com

- Q.1 What are the determinants of regional security?
- Q.2 What are the major setbacks in Landlocked Developing Countries (LLDCs)?
- Q.3 What is the role of infrastructural development to enhance regional security in landlocked states?
- Q.4 What are the specific challenges facing landlocked countries?
- Q.5 What are the major infrastructures required in LLDCs?
- Q.6 What are the security problems in LLDCs?

SUMMARY AND ANALYSIS OF SURVEY -1 AND 2

Section -A : Participant Information

SNo	Particular	Response	Codes
1	Gender		1 = Male 2 = Female
2	Education		1 = Bachelors 2 = Masters 3=Ph.D.

1. Total participants
 - 1.1 Male - 34
 - 1.2 Female - 11
 - 1.3 Education
 - 1.3.1 Bachelors - 8
 - 1.3.2 Masters - 23
 - 1.3.3 Ph.D - 1
 - 1.3.4 Studying in Bachelors level - 13

Section -B: Responses on Close Ended Questionnaires

1. Question 1 as:

S No	Question	Response	Codes
1	Infrastructure development plays vital role in regional security. Agree or Disagree		1=Agree 2=Disagree

Table 1 - Response: Perception of Individual - 'Infrastructure development plays vital role in regional security'

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	43	95.6	95.6	95.6
Disagree	2	4.4	4.4	100.0
Total	45	100.0	100.0	

(SPSS Analysis)

2. Question 2 as:

S No	Question	Response	Codes
2	What is the major infrastructure for development?		1=Transportation 2=Information Technology 3=Health Facility 4=Industrial Development 5=Electricity 6=Drinking Water

Table 2 - Response: Perception of Individual - 'Major infrastructure for development'

Infrastructure	First priority order (HH)	%	Second priority order (HH)	%	Third priority order (HH)	%	Composite Value
Transportation	18	40.00	6	13.33	13	28.89	79
Drinking Water	12	26.67	5	11.11	11	24.44	57
Communication	5	11.11	17	37.78	7	15.56	50
Electricity	5	11.11	9	20.00	5	11.11	36
Industry	3	6.67	5	11.11	3	6.67	18
Health Facility	2	4.44	3	6.67	6	13.33	21
Total	45	100	45	100	45	100	

(SPSS Analysis)

3. Question 3 as:

S No	Question	Response	Codes
3	What are the current sector approaches and good practices in infrastructure development in LLDCs?		1=Transportation Infrastructure Development 2=ICT Infrastructure Development 3=Health Facility 4=Industrial Development 5=Electricity 6=Drinking Water

Table 3 - Response: Current sector approaches and good practices in infrastructure development in LLDCs

Infrastructure	Responses out of total frequency (45)	%
Transportation	35	77.78
Drinking Water	11	24.44
Communication	12	26.67
Electricity	9	20.00
Industry	4	8.89
Health Facility	4	8.89

(SPSS Analysis)

4. Question 4 as:

S No	Question	Response	Codes
4	What are the key factors of regional security?		1=Infrastructure Development 2=Political Stability 3=Military Cooperation

Table 4 - Response: Key factors of regional security

Particulars	Response out of 45	Percentage
Infrastructure Development	14	31.11
Political Stability	32	71.11
Military Cooperation	10	22.22

(SPSS Analysis)

5. Question 5 as:

S No	Question	Response	Codes
5	Transportation infrastructure is the key determinant of regional security. Agree or Disagree		1=Agree 2=Disagree

Table 5 - Response: Transportation infrastructure as the key determinant of regional security

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	35	77.78	77.78	77.78
Disagree	10	22.22	22.22	100.0
Total	45	100.0	100.0	

(SPSS Analysis)

6. Question 6 as:

S No	Question	Response	Codes
6	LLDCs have been progressing in infrastructure development?		1=Rapidly 2=Slowly 3=Not progressing

Table 6 – Opinion: Infrastructure development progress

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Rapidly	4	8.89	8.89	8.89
Slowly	37	82.22	82.22	91.11
Not progressing	4	8.89	8.89	100.0
Total		100.0	100.0	

(SPSS Analysis)

7. Question 7 as:

S No	Question	Response	Codes
7	What are the challenges faced by LLDCs?		1=Dependence upon infrastructure levels in transit nations 2=Time delays due to high administrative burden 3=Political challenges

Table 7 - Challenges faced by LLDCs

Response	Response out of 45	Percentage
Code 1	20	44.44
Code 2	12	26.67
Code 3	18	40.00

(SPSS Analysis)

8. Question 8 as:

S No	Question	Response	Codes
8	What are the factors affecting regional security of LLDCs?		1=Infrastructure Development 2=Regional Cooperation 3=Stability within

Table 8 - Response: Factors affecting regional security of LLDCs

Particulars	Response out of 45	Percentage
Infrastructure Development	12	26.67
Regional Cooperation	21	46.67
Stability within	18	40.00

(SPSS Analysis)

9. Question 9 as:

S No	Question	Response	Codes
9	What are the factors affecting regional security of LLDCs?		1=Landlockedness 2=Internal instability 3=Lack of infrastructure

Table 9 - Opinion: Regional security setbacks in Asia particularly in LLDCs

Factors	Responses out of 45	Percentage
Landlockedness	12	26.67
Internal instability	24	53.33
Lack of infrastructure	16	35.56

(SPSS Analysis)

10. Question 10 as:

S No	Question	Response	Codes
10	What are the regional security factors in South Asian region?		1=Lack of regional cooperation 2=Political instability within 3=Lack of infrastructure

Table 10 - Response: Regional security factors in South Asian region

Factors	Responses out of 45	Percentage
Lack of regional cooperation	27	60.00
Political instability within	26	57.78
Lack of infrastructure	25	55.56

(SPSS Analysis)

11. Question 11 as:

S No	Question	Response	Codes
10	What are the regional security factors in South Asian region?		1=Political instability 2=Landlockedness 3=Lack of planning 4=Others - Not sure

Table 11 - Response: Challenges of infrastructure development in Nepal

Factors	Responses out of 45	Percentage
Landlockedness	16	35.56
Internal instability	21	46.67
Lack of infrastructure	14	31.11
Others - Not sure	1	2.22

(SPSS Analysis)

12. Question 12 as:

S No	Question	Response	Codes
12	Which is the major infrastructure for Nepal's development?		1=Transportation 2=Health facility 3=ICT 4=Industrial development

Table 12 - Response: Major infrastructure for Nepal's development

Factors	Responses out of 45	Percentage
Transportation	30	66.67
Health facility	3	6.67
ICT	6	13.33
Industrial development	6	13.33

(SPSS Analysis)

13. Question 13 as:

S No	Question	Response	Codes
13	Landlockedness is the major setback for Nepal for developing infrastructure and regional security. Agree or Disagree		1=Agree 2=Disagree

Table 13 - Response: Major setback for Nepal's infrastructure development and regional security

Response	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	34	75.56	75.56	75.56
Disagree	11	24.44	24.44	100.0
Total	45	100.0	100.0	

(SPSS Analysis)

14. Question 14 as:

S No	Question	Response	Codes
13	How can Nepal be transferred from landlocked to land linked?		1=Regional cooperation 2=Cooperation with great powers 3=Inland connectivity 4=Others

Table 14 - Opinion: Option available to transfer Nepal as land linked

Measures available	Responses out of 45	Percentage
Regional cooperation	25	55.56
Cooperation with great powers	7	15.56
Inland connectivity	15	33.33
Others (Effective economic Diplomacy, Developing Nepal as business hub)	2	4.44

(SPSS Analysis)

Section -C: Responses on Open Ended Questionnaires

Q.15 How can landlocked countries turn themselves to land-linked countries?

- By thoroughly building their inland networks and collaborating with maritime countries, they will be able to achieve their goals.
- Countries should invest in road networks to build land-links with other neighboring countries that have access to the sea.
- By through regional infrastructure development, and improved inland connectivity in order to enhance the regional cooperation. The LLDCs need to establish collaboration with other countries in the region.
- Having deals with countries that have access to the sea, providing a proper transportation system to the border, and allowing for quicker and more reliable clearance of inbound and outbound goods and services.
- Regional cooperation to enable joint infrastructure development to promote required land and sea linkages and access.

- By forming strategic alliances with countries that have coastlines and are developing strong infrastructure. Developing good relationships with neighbours and throughout the region. Political stability is also key in this regard.
- Participate in regional economic development and strengthen regional economic integration.
- A well-thought-out international policy aimed at enhancing communication. Employ the experts in the fields of information, communication, and technology exchange.
- Countries involved can abide by the United Nations Convention on Landlocked States' Transit and Trade and have continuous port entry. Taking advantage of the UN's landlocked resolution in order to gain the goodwill and trust of our neighbours.
- Increased investments in resilient and sustainable infrastructure construction and maintenance. Address threats and opportunities of LLDCs.
- Establish good cooperation with neighboring countries on a regional scale. Need to enjoy the rights of landlocked countries.
- Infrastructure encompasses both artificial intelligence and technology, so exchanging data would certainly strengthen regional security.

Q.16 How can landlocked developing countries enhance regional security by developing infrastructure?

- By forming regional bilateral and multilateral security agreements with maritime nations.
- Infrastructure development will aid the country's economic growth. Stability and prosperity can be achieved in the country as the economy improves.
- Citizens will be able to participate in socioeconomic growth as a result of improvements to the transportation network and other social services infrastructures.
- Through good tie up and collaboration with all of the concerned areas, ensuring that law enforcement officers can travel and exchange information more effectively.

- Conducting joint training and military exercises with their regional partners and have joint infrastructural facilities developed using collective efforts.
- Through development of infrastructure, free movement of people, services and products can expand markets and boost integration of people.
- By collaborating with other nations and develop infrastructure which is a catalyst for economic growth because it promotes commerce by facilitating the flow of commodities, people, and market access.
- Cooperation and integration are the keys to success. ICT is therefore reliant on the facilities needed to facilitate capital flows.
- Through regional cooperation.

Q.17 What are the major infrastructures required in landlocked developing countries?

- Creating cooperative infrastructural ties with neighboring countries. Infrastructure construction will pave the way for international cooperation in the area and aid in regional stability. Free markets and free trade in the region will be feasible, similar to the EU, which will increase interdependence between states.
- Regional cooperation and proper planning for long-term sustainability to raise the Human Development Index; regional cooperation for long-term regional development to raise people's living standards.
- Infrastructures built to facilitate the constant exchange of permitted goods between countries will contribute to regional security; transit should not be obstructed.
- Increasing global cooperation, development and regularly maintenance. Effective development of key transit policy issues.
- Boost international trade and facilitation for landlocked countries which will improve regional stability by building people-to-people relationships through infrastructure construction.
- Promoting tourism, investment, trade, and commerce by sharing knowledge and promoting tourism, business, trade, and commerce.
- Aspects and components of regional security include a range of factors within a nation, and infrastructure growth is critical for connecting, transmitting, and

disseminating regional economic progress, which implicitly contributes to regional security.

- Roads, Rail and Airport infrastructure to enhance the movement of goods and services.
- Good road, rail and air connectivity, fast ICT systems, MoUs with countries with sea access, dry ports.
- Modern Railway lines and well-constructed roads to withstand large cargo from the coast line countries.
- Transportation and electricity in every hubs, healthcare facilities and organized industries.

Q.18 How does infrastructure development in landlocked countries improve regional security?

- Interdependence improves as a result of interconnectedness, which decreases the probability of war in the area.
- Movement of individuals, products, and services is made easy. This will enhance quick transportation of goods and services there by promoting peace and stability within the region. Citizens will be able to participate in socioeconomic development if the transit network and other social service infrastructures are improved. As a result, the population will be prosperous, and the whole region will be secure.
- Various security measures are in place along the route for security reasons, which necessitates close cooperation between trade partner countries. This ultimately enhances the regional security.
- Roads, railways, and airports are also modes of transportation which have connected with information and communication technologies (ICT). This ICT bring effective coordination among the trading countries, which ultimately lead to a better regional security.
- By facilitating employment through trade and industrialization, as well as regional integration and law enforcement response times. Regional stability can be ensured by cooperation in the development of infrastructure facilities.
- Free movement of individuals, services, and goods will widen economies and improve people integration through infrastructure development.

- Improves connectivity among countries to conduct trade and realize economic security
- Infrastructure is a key driver of economic growth because it promotes trade by facilitating the flow of commodities, people, and market access.
- ICT is also dependent on necessary infrastructure to enable capital flows. Hence developing infrastructure will enable economic transformation and better livelihoods which translate to improved human and physical security as the populations will not fight over resources if they are satisfied.
- Sharing of transportation infrastructure facilities and develop connectivity enhance people to people relations. Exchange of information, technology, trade and commerce helps to enhance to improve the regional security.
- Any problems addressed in one country would assist the next country in moving on without needless disruptions or detrimental influences. There will be no negative transnational consequences.
- Infrastructure encompasses both artificial intelligence and technology, so sharing information would certainly improve regional security. Infrastructure development enhances the economy of the state as well as regional stability.

Q.19 What are the possible approaches and strategies to enhance regional security by developing infrastructure in landlocked countries?

- Infrastructure may be established with regional and international development partners through joint ventures or public-private partnerships. Investing in roads, railways, and land transportation are also viable options.
- The development of a master plan for interconnecting the infrastructure of the city. Regional coordination and interdependence are boosted by such plans. Conflict is less likely as a result of such interdependence.
- Common infrastructure planning programs – cross-country, one-stop border stations, and law enforcement information exchange.
- Have co-financed infrastructure projects for landlocked states. Enhance trading activities (trade) with countries that are connected by property.
- Encourage land-linked states to conduct security training at all levels, from police to military.

- Have exchange programs with regional partners on common socio-cultural concerns such as education, health, and other socio-cultural issues to improve neighborliness and alleviate any suspicions.
- Regional cooperation to improve connectivity through infrastructure development. Bilateral and multilateral economic and development cooperation are being used to build transnational infrastructure.
- To tackle the high costs of transportation and trade, landlocked countries should consider a number of measures, including, but not limited to, improved trade facilitation, regional transportation, trade, and ICT connectivity, improved cross-border logistics, and steady investment only.
- Creation of Security platform to achieve sustainable development strategies. To create win-win solutions for the reduction of poverty, and improvement of society and environment for all across the region.
- To achieve sustainable development goals, a security platform must be developed. To find win-win opportunities and to reduce poverty and strengthen society and the environment for all in the region. Execution of UN resolution on the rights of landlocked countries and respect to neighbours as sovereign country by the maritime countries.
- First and foremost, political stability is needed, followed by the establishment of diplomatic relations with neighboring countries through regional cooperation and the development of infrastructures side by side. It is critical to strengthen all weak sectors and maintain political stability, as well as to educate people about development opportunities and expand together motives.

SUMMARY OF FOCUS GROUP DISCUSSION (FGD)

1. Prepared Questions for Discussion

- Q.1 How can landlocked countries turn themselves to land-linked countries?
- Q.2 How can landlocked developing countries enhance regional security by developing infrastructure?
- Q.3 What are the major infrastructures required in landlocked developing countries?
- Q.4 How does infrastructure development in landlocked countries improve regional security?
- Q.5 What are the possible approaches and strategies to enhance regional security by developing infrastructure in landlocked countries?

2. Discussion Detail

Respondents - 6 (Burundi-1, Malawi-1, Uganda-2, Tanzania-2)

Place - National Defence College, Karen, Kenya

Date - 20 February 2021

3. Summary of Discussion

3.1 Possible options for LLDCs to turn themselves into land linked countries

Promoting regionalism and economic integration through cooperation with maritime could be done with neighbouring countries. Improve transit corridor and enhance trade capability. By embracing the opportunities provided by neo-liberalism of interconnectedness that enhance inter-state linkages. Improve industries within the country and produce materials with focusing on value addition needed to neighbouring countries.

3.2 Enhancing the regional security by LLDCs through developing infrastructure

Develop mechanisms for interdependence between neighbouring countries. Enhancing the regional economy possibly creates common currency. Develop the international standards road networks. Develop railway services, create and man one stop shop at the border for border related functions. Contribute to develop and maintain the sea ports. Maximize the benefit to all countries.

3.3 Major infrastructures required in landlocked developing countries

Three key infrastructures are required.

- a. Transport facilities - Road networks, railway services, airstrips and water transport
- b. Digital communication
- c. Energy

3.4 Infrastructure development within LLDCs in improving regional security

River linking project may affect slightly which should be handled bilaterally or multilaterally. Maritime countries should be liberal in this aspect.

3.5 Possible approaches and strategies to enhance regional security

Adopt joint venture strategy

Establishing regional integration and develop active trade routes and expand market access

Jointly deal with the common issues

Develop regionalism

Develop trade cooperation and implement at least free trade agreement

Implement one stop system

SUMMARY OF INTERVIEW

1. General

Interview was conducted as a tool for qualitative analysis. Total 5 Key Informant Interviews (KII) was conducted among the Professors, Ph.D. scholar and senior military officers. With the request of some individual, the name of interviewee has not been included here, instead overall summary of interviews have been mentioned here. All interviews were taken through online on various date starting from 27 February to 11 March 2020.

2. Interview Summary

2.1 Approaches to Turn Landlocked Countries into Land Linked Status

The LLDCs are mostly affected by their challenging geographic location. Other factors include being cut off from international markets, lacking access to seaports, and being reliant on conditions in neighboring countries. Hard and soft infrastructure development is required as countries transition from landlocked to land-linked status in order to benefit from multiple opportunities. ITC can help LLDC's in addressing their constraints by supporting trade facilitation and improving the competitiveness of small and medium-sized enterprises (SMEs). It will support LLDCs in entering into the global economy. It would contribute to global prosperity and, as a result, poverty reduction.

The following are some of the approaches for turning landlocked countries into land-linked countries.

2.1.1 Diversifying the Economies

Diversification is aided by the private sector. Public investments and capital spending would help achieve economic diversification in a well-timed manner.

Making progress in various areas, such as access to energy and ICT, education and structurally transforming and diversifying their economies. Bhutan has boosted the percentage of people with access to electricity from 41% in 2003 to over 97 percent in 2017. Armenia has helped the ICT industry develop into one of the country's most

important sectors. Armenia's ICT sector has expanded by 20% annually since 2008, reaching record 38% expansion in 2017.

Connecting the economies with global value chains, both physically and economically, landlocked countries face higher transportation prices to seaports, which handle the majority of world trade. Prioritize growth drivers based on current infrastructure, human capital endowments, and value chain upgrade potential. Small and medium-sized enterprises (SMEs) need a thriving financial sector to grow. SMEs generate most employment opportunities, which in turn can help absorb the excess labor in low-productivity sectors.

The largest of Central Asian landlocked countries now have high literacy and education enrollment rates. Future rivalry would almost certainly focus on well-educated workers rather than traditional machines. In these regions, most landlocked countries will compete on an equal footing.

2.1.2 Improve Non-physical Trade Connectivity

Landlocked countries must improve non-physical trade connectivity. Non-physical considerations like customs procedures, border crossing and sanitary and phytosanitary quarantines are becoming more critical in deciding a country's trade competitiveness. Landlocked countries must develop and exceed others in these non-physical areas while continuing to improve their physical connectivity. For these connectivity to be reliable, it must be planned, implemented, and monitored at the regional level, with investments prioritized and according to underlying trade flows.

2.1.3 Enabling Regulatory Framework

Diversification is a long-term economic development goal that must be achieved. It is essential to provide a well-defined and enabling regulatory framework as well as institutional arrangements. First and foremost, a well-defined and enabling regulatory framework that promotes and propels the private sector's role as the primary driver of diversification is needed. This necessitates well-defined regulatory policies governing the activities of special economic zones and industrial clusters, as well as empowered institutional bodies to oversee viable economic corridor structures.

2.2 Enhancing Regional Security by the LLDCs with Infrastructure Development

Any nation's security is intertwined with other facets of its existence, one of which is development. Employment opportunities and economic growth are among the benefits of development. Infrastructure contributes to sustainable development by increasing access to services and opportunities.

Connectivity is a pillar of regional economic cooperation and integration, and it has emerged as a top priority for Asia and the Pacific countries. Especially in the context of efforts to identify new drivers of regional economic growth and generate additional domestic and regional demand it is more important. Regional connectivity is complex, with the connectivity of one sector affecting the connectivity of others. This creates new challenges in terms of the need for greater coordination. It opens up new possibilities for combining diverse components in ways that improve network efficiency. Infrastructure is intrinsically linked to the Sustainable Development Goals.

The Asia-Pacific region has the opportunity to build regional networks that are interconnected and organized. Regional approaches will assist countries in looking beyond their own borders. Governments could expand shippers' and traders' transportation options. In trade from LLDCs, regional intermodal transport networks would be highly pertinent. LLDCs may engage more effectively in international and regional trade by investing in intermodal facilities, such as dry ports, as well as improved physical linkages between various modes.

2.3 Major Infrastructures Required in LLDCs

Improved transportation connectivity, trade, and trade facilitation are the most critical infrastructures. To address the severity of the infrastructure deficit, comprehensive actions and collaborations are expected. It is critical to create an enabling international economic environment to support the LLDCs' structural economic transformation efforts. The Belt and Road Initiative (BRI) infrastructure to boost land and sea connectivity is one of the main trade routes that have been evolving in Asia. The Trans-Asian Railway network, which has been identified as production hubs and routes could provide connecting countries and providing key links for LLDCs.

By exploiting demand for transit facilities, LLDCs are raising revenue and financing the proper of reliable and efficient transportation networks within and around their

cities. These transmission lines are expected to make the construction of hydroelectric power plants in Nepal more accessible, providing electricity to both Nepal and its neighbours. Both internal and external networks are needed. The construction of corridors also allows for the safe implementation of other facilities such as bridges, pipelines, and internet infrastructure including high-speed optical cable. For trade between China and Nepal, the Rasuwagadhi Checkpoint is now the only land border crossing.

2.4 Infrastructure Development and Regional Security

The formation of modern city agglomerations in the economic security sector will improve security by leveraging their science, educational, intelligence, creative, and transportation frameworks. Overall, in the field, there should be strong coordination, joint networking, and common interest. Infrastructure sectors, especially transportation, a science and technology framework and education play a critical role in regional security.

For coordinated regional stability, security and connectivity vs. connectivity security perspective must be analyzed in detail. The level of interdependence, as well as the security architecture, must be maximized. Economic growth, sociocultural change, as well as security and interaction among major neighbours, are all factors to consider in a proximity and security-based approach.

2.5 Possible Approaches and Strategies to Enhance Regional Security

The countries in the region share almost common history, tradition, and social values. Transportation (airports, bridges, and cable cars), social (hotels, convention centers, stadiums, and galleries), and environmental (natural value) infrastructures are the three types of physical infrastructure. Governance (law enforcement, customs, and immigration) is a critical non-physical infrastructure for promotion of security.

Physical, cultural, service, and governance are the most common infrastructures in any country. All of these physical and non-physical infrastructures would contribute to regional stability. In addition, track-2 diplomacy (people-to-people) is a powerful tool for enhancing regional stability.

New initiatives like the BRI, Asian highway are reigniting interest in building standardized rail, road, pipeline, energy, and data networks across Asia. To mitigate risks, LLDCs would need to carefully align the cost of maintenance and financing

with their own economic development. New infrastructure may also provide these countries with previously unknown access, allowing them to provide services (such as logistics, outsourcing, and financial services) to enterprises along the way. New infrastructure will be a driver of growth and prosperity for these countries if it is well planned and developed in accordance with their national development plans.

The UNESCAP has supported the Asia Highway Network and the Trans-Asian Railway Network for decades, with limited success. The LLDC must develop equitable and socially sustainable schemes for building, operating, and maintaining transportation, transit, and trade networks that equitably distribute risks, expenses, and benefits to all members.

Maintaining institutions and good governance should be done in place to handle domestic and cross-border trade and transportation. Hard infrastructure (e.g., roads, ports) and soft infrastructure (e.g. transport services, regional security arrangement) can work together to promote positive outcomes. Better distribution services, feeder transport networks, and storage connections for the weakest and smallest producers are all can be targeted.